Haier

Commercial Air Conditioning

SERVICE MANUAL

MULTI upgrade series

Models

Indoor: AB09CS1ERA
AB12CS1ERA
AB18CS1ERA
AB24ES1ERA
AC12CS1ERA
AC18CS1ERA
AC24CS1ERA
AD09LS1ERA
AD12LS1ERA
AD18LS1ERA
AD24LS1ERA
Outdoor: 3U19FS1ERA
4U25HS1ERA
4U30HS1ERA
5U34HS1ERA

- DC inverter technology, high energy efficiency, higher EER A+, energy saving for the user
- Universal indoor units for multi upgrade series, Unitary smart DC inverter and HAIER DAC split inverter type
- High voltage communication, convenient wiring work
- Multiple control types
- 10℃ constant temperature control
- Universal power supply for 50Hz and 60Hz
- Central control function available
- New friendly refrigerant R410a, zero ODP, environment protection

Manual code: SYJS-017-10REV.0 Edition: 2010-12-10

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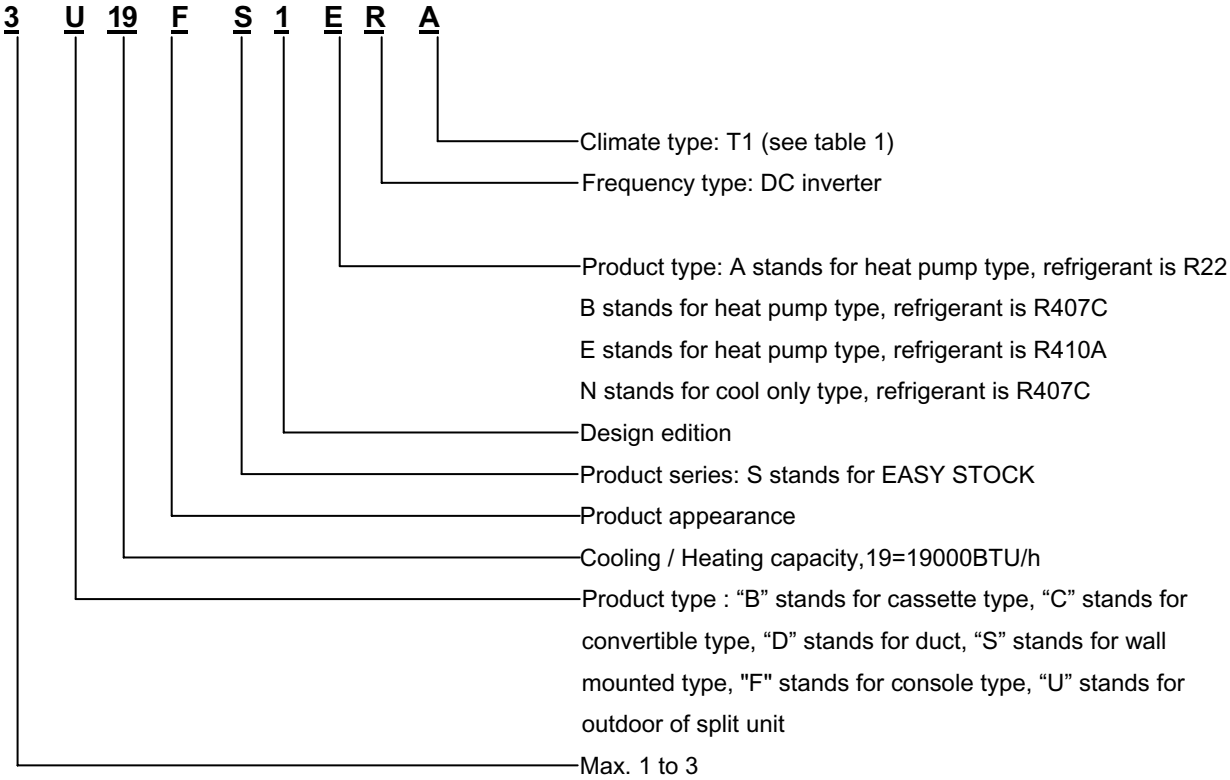
1.Description of products & features

1.1. Products code explanation



1.2 Brief Introduction for T1,T2,T3 working condition

Type of Air Conditioner	Climate type		
	T1	T2	T3
Cooling Only	18 ℃~43℃	10℃~35℃	21℃~52℃
Heat pump	-7℃~43℃	-7℃~35℃	-7℃~52℃
Electricity Heating	~43℃	~35℃	~52℃

1.3 Operating Range of Air Conditioners

Working temperature range					
			Rated	Maximum	Minimum
Cooling	Indoor	DB℃	27	32	18
		WB℃	19	23	14
	outdoor	DB℃	35	43	-10
		WB℃	24	26	6
Heating	Indoor	DB℃	20	27	15
		WB℃	14.5	--	--
	outdoor	DB℃	7	24	-15
		WB℃	6	18	--

1.4 Product features

DC inverter technology, high energy efficiency, higher EER A+, energy saving for the user

The outdoor unit adopts DC inverter compressor and motor, so save power energy is just to save money for the user. And the outdoor can match with multiple indoor units, up to 5 sets. Even when you have already installed the air conditioner, if you want to add or reduce one unit, go ahead freely as long as your operation complies with our design. Greatly convenient for designer and installer.

Precise control, more comfortable and more reliable

The outdoor is equipped with electronic expansion valve, which will control refrigerant flow more precisely. As a result, the user will feel more comfortable and the unit is more reliable.

Also, the outdoor is with oil segregator, which will keep the compressor working normally and make oil return more smoothly.

Universal indoor units for multi upgrade series, unitary smart DC inverter and HAIER DAC split inverter type

The indoor units are universal for the outdoors which belongs to EASY STOCK series. EASY STOCK is new concept brought by Haier to be convenient for design, sale, operation, and stock management.

Adopt the much friendlier refrigerant R410a

The air conditioner system adopts the greatly friendly refrigerant R410a, which is protective for the ozone layer and is good to avoid the earth getting warmer. Benefit for the environment.

High voltage communication, convenient wiring work

Connect indoor and outdoor directly, and there is no communication wire between indoors. Thus the wiring work is more convenient. No need to set indoor address.

Multiple control types

The indoor unit can be controlled by multiple types: infrared controller, wired controller, central controller. More choice, more conveniently.

10℃ constant temperature control

When leave home temporarily, press 10℃ button of remote controller, the indoor temperature won't decrease rapidly while be controlled at 10℃. When come back home, press it again, the unit will be back to normal status and setting temperature.

Auto–restart function (optional)

All indoor units have auto-restart function. When the power supply cut off suddenly, the unit will automatically recover the previous running mode once the power supply is on.

Self-diagnostic function

In the course of operation, if the failure occurs, the failure code will display on the wired controller or

on the operation panel. Then according to the failure code chart, you can eliminate the failure soon.

- **Central control function, if connected with a central controller**

That is convenient for building management.

- **Weekly timing function, if connected with a weekly timer**
- **Universal power supply for 50Hz and 60Hz**

The multi upgrade series adopts universal power supply for 50Hz and 60Hz, which is convenient for design. Much wider application.

1.5 Product lineup

➢**Outdoor unit 220V/1/ *(50/60Hz)***

Connection diagram	Picture	Max.indoor quantity	Cooling capacity(Kbtu)			
			19	25	30	34
		3	●			
		4		●	●	
		5				●

➢**Indoor unit 220V/1/ *(50/60Hz)***

SERIES \ kBTU/h / kW		7 2.2	9 2.8	12 3.6	18 5.0	24 6.5
Cassette Type(4-way)			●	●	●	●
Floor & Ceiling type				●	●	●
ceiling concealed duct			●	●	●	●
HEM mounted type		●	●	●	●	●
Console type			●	●	●	

2. Specifications

Item / Model				3U19FS1ERA	
Function				Cooling	Heating
Rating capacity			W	5400	6500
Power input (indoor + outdoor)			W	1410	1520
Current input (indoor + outdoor)			A	6.13	6.6
EER / COP			W/W	3.84	4.28
Minimum capacity			W	1500	1800
Minimum power input			W	500	500
Maximum capacity			W	7000	8100
Maximum power input (indoor + outdoor)			W	2600	2600
Power source				1PH, 220-230V~, 50/60Hz	
Max.Running current (indoor + outdoor)			A / A	11.3	11.3
Power facor(under rating power input)				99%	99%
Fuse size (recommended size)			A	16	
Indoor units number				1~3	
Outdoor unit	Compressor	Model / Manufacture		SNB130FGYMC-L1 / MGC	
		Oil charge and type		500CC, FV 50S	
		Type		Twin Rotary (DC inverter)	
		Winding resistance(at 20℃)	Ω	0.58	
	Fan system	Fan type × Number		Axial × 1	
		Motor speed	r/min	Max. 860	
		Fan motor model		ARW4403AS	
		Motor type		DC	
		Motor output/input power	W	55/69	
		Air-flows (H/M/L)	m³/h	about 2000	
	Heat exchanger	Type / Diameter	mm	TP2M / 7.94	
		Number of rows		2	
		Face area	m²	about 0.52	
	Dimension (WxDxH)	External	mm	886/289/688	
		Package	mm	990/405/760	
	Refrigerant control method			PMVs	
	Defrosting method			Automatic by reversible cycle	
	Crankcase heater power		W	35	
	Noise level	H/M/L	dB(A)	52/-/-	
	Weight	Net / Shipping	kg / kg	51/ 53	
Piping	Refrigerant	Type / Charge	kg	R410A /1.9	
		Total liquid piping length without recharge	m	less than 30	
		Recharge	g/m	20	
	Pipe size	Liquid	mm	3* Φ6.35	
		Gas	mm	3* Φ9.52	
	Connecting method			Flared	
	Between IU & OU	Max.Drop between IU & OU	m	15	
		Max.Drop between indoor units	m	7.5	
		Max.Piping length between IU & OU	m	25	
		Max.Total length	m	50	

1. The above performance data are from the combination of 3U19FS1ERA+3*AS09CS1ERA

2. Large drop and long piping installation will obviously reduce the total capacity.

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

Item / Model				4U25HS1ERA	
Function				**Cooling**	**Heating**
Rating capacity			W	7600	8600
Power input (indoor + outdoor)			W	2100	2060
Current input (indoor + outdoor)			A	9.1	9.0
EER / COP			W/W	3.62	4.18
Minimum capacity			W	1500	1800
Minimum power input			W	550	550
Maximum capacity			W	9000	9500
Maximum power input (indoor + outdoor)			W	3500	3500
Power source				1PH, 220-230V~, 50/60Hz	
Max.Running current (indoor + outdoor)			A / A	15.2	15.2
Power facor(under rating power input)				99%	99%
Fuse size (recommended size)			A	25	
Indoor units number				2~4	
Outdoor unit	Compressor	Model / Manufacture		TNB220FLHMC-L / MGC	
		Oil charge and type		870CC / FV50S	
		Type		Twin Rotary (DC inverter)	
		Winding resistance(at 20℃)	Ω	0.88	
	Fan system	Fan type × Number		Axial × 1	
		Motor speed	r/min	Max. 860	
		Fan motor model		EHDS80A100AS	
		Motor type		DC	
		Motor output/input power	W	100/125	
		Air-flows (H/M/L)	m³/h	about 4000	
	Heat exchanger	Type / Diameter	mm	TP2M / 7.94	
		Number of rows		2	
		Face area	m²	about 0.75	
	Dimension (WxDxH)	External	mm	948/340/840	
		Package	mm	1040/430/1000	
	Refrigerant control method			PMVs	
	Defrosting method			Automatic by reversible cycle	
	Crankcase heater power		W	35	
	Noise level	H/M/L	dB(A)	56	
	Weight	Net / Shipping	kg / kg	74/85	
Piping	Refrigerant	Type / Charge	kg	R410A / 2.9	
		Total liquid piping length without recharge	m	less than 40	
		Recharge	g/m	20	
	Pipe size	Liquid	mm	4* Φ6.35	
		Gas	mm	3* Φ9.52(A,B,C)+1*Φ12.7(D)	
	Connecting method			Flared	
	Between IU & OU	Max.Drop between IU & OU	m	15	
		Max.Drop between indoor units	m	7.5	
		Max.Piping length between IU & OU	m	25	
		Max.Total length	m	70	

1. The above performance data are from the combination of 4U25HS1ERA+4*AS09CS1ERA.
2. Large drop and long piping installation will obviously reduce the total capacity.

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

Item / Model				4U30HS1ERA	
Function				Cooling	Heating
Rating capacity			W	8100	9800
Power input (indoor + outdoor)			W	2220	2430
Current input (indoor + outdoor)			A	9.7	10.6
EER / COP			W/W	3.65	4.03
Minimum capacity			W	1500	1800
Minimum power input			W	550	550
Maximum capacity			W	9800	10500
Maximum power input (indoor + outdoor)			W	3800	3800
Power source				1PH, 220-230V~, 50/60Hz	
Max.Running current (indoor + outdoor)			A / A	16.5	16.5
Power facor(under rating power input)				99%	99%
Fuse size (recommended size)			A	25	
Indoor units number				2~4	
Outdoor unit	Compressor	Model / Manufacture		TNB220FLHMC-L / MGC	
		Oil charge and type		870CC / FV50S	
		Type		Twin Rotary (DC inverter)	
		Winding resistance(at 20℃)	Ω	0.88	
	Fan system	Fan type × Number		Axial × 1	
		Motor speed	r/min	Max. 860	
		Fan motor model		EHDS80A100AS	
		Motor type		DC	
		Motor output/input power	W	100/125	
		Air-flows (H/M/L)	m³/h	about 4000	
	Heat exchanger	Type / Diameter	mm	TP2M / 7.0	
		Number of rows		3	
		Face area	m²	about 0.75	
	Dimension (WxDxH)	External	mm	948/340/840	
		Package	mm	1040/430/1000	
	Refrigerant control method			PMVs	
	Defrosting method			Automatic by reversible cycle	
	Crankcase heater power		W	35	
	Noise level	H/M/L	dB(A)	58	
	Weight	Net / Shipping	kg / kg	76/87	
Piping	Refrigerant	Type / Charge	kg	R410A / 3.0	
		Total liquid piping length without recharge	m	less than 40	
		Recharge	g/m	20	
	Pipe size	Liquid	mm	4* Φ6.35	
		Gas	mm	3* Φ9.52(A,B,C)+1*Φ12.7(D)	
	Connecting method			Flared	
	Between IU & OU	Max.Drop between IU & OU	m	15	
		Max.Drop between indoor units	m	7.5	
		Max.Piping length between IU & OU	m	25	
		Max.Total length	m	70	

1. The above performance data are from the combination of 4U30HS1ERA+4*AS09CS1ERA.
2. Large drop and long piping installation will obviously reduce the total capacity.

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

Item / Model				5U34HS1ERA	
Function				**Cooling**	**Heating**
Rating capacity			W	10000	10700
Power input (indoor + outdoor)			W	2940	2850
Current input (indoor + outdoor)			A	12.8	12.4
EER / COP			W/W	3.4	3.75
Minimum capacity			W	1500	1800
Minimum power input			W	550	550
Maximum capacity			W	11000	11500
Maximum power input (indoor + outdoor)			W	4000	4000
Power source				1PH, 220-230V~, 50/60Hz	
Max.Running current (indoor + outdoor)			A / A	17.4	17.4
Power facor(under rating power input)				99%	99%
Fuse size (recommended size)			A	30	
Indoor units number				2~5	
Outdoor unit	Compressor	Model / Manufacture		TNB220FLHMC-L / MGC	
		Oil charge and type		870CC / FV50S	
		Type		Twin Rotary (DC inverter)	
		Winding resistance(at 20℃)	Ω	0.88	
	Fan system	Fan type × Number		Axial × 1	
		Motor speed	r/min	Max. 900	
		Fan motor model		EHDS80A100AS	
		Motor type		DC	
		Motor output/input power	W	100/125	
		Air-flows (H/M/L)	m³/h	about 4000	
	Heat exchanger	Type / Diameter	mm	TP2M / 7.0	
		Number of rows		3	
		Face area	m²	about 0.75	
	Dimension (WxDxH)	External	mm	948/340/840	
		Package	mm	1040/430/1000	
	Refrigerant control method			PMVs	
	Defrosting method			Automatic by reversible cycle	
	Crankcase heater power		W	35	
	Noise level	H/M/L	dB(A)	58/-/-	
	Weight	Net / Shipping	kg / kg	77/88	
Piping	Refrigerant	Type / Charge	kg	R410A / 3.2	
		Total liquid piping length without recharge	m	less than 40	
		Recharge	g/m	20	
	Pipe size	Liquid	mm	5* Φ6.35	
		Gas	mm	4* Φ9.52(A,B,C,D)+1*Φ12.7(E)	
	Connecting method			Flared	
	Between IU & OU	Max.Drop between IU & OU	m	15	
		Max.Drop between indoor units	m	7.5	
		Max.Piping length between IU & OU	m	25	
		Max.Total length	m	80	

1. The above performance data are from the combination of **5U34HS1ERA+3*AS09CS1ERA+1*AS18CS1ERA.**
2. Large drop and long piping installation will obviously reduce the total capacity.

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

Item				Model	AB09CS1ERA	
Function					cooling	heating
Capacity				kW	2.6	2.9
Sensible heat ratio					0.71	/
Dehumidifying capacity				10 - ³×m³/h	1.5	
Indoor unit	Power Supply				1PH,220-230V 50-60HZ	
	Fan	Type × Number			CENTRIFUGALX1	
		Speed(H-M-L)		r/min	690/620/560	
		Fan motor output power		kW	0.03	
		Air-flow(H-M-L)		m³/h	620/520/450	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ7	
		Total Area		m²	0.272	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	570×570×260	
		Package	（L×W×H）	mm×mm×mm	718×680×380	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 26/32	
	Control type (Remote /wired)				Remote or Wired	
	Fresh air hole dimension			mm	56	
	Electricity Heater			kW	NONE	
	Noise level (H-M-L)			dB(A)	40/36/32	
	Weight (Net / Shipping)			kg / kg	17/20	
Panel	Panel model (color)				**PB-700IB（WHITE）**	
	Dimension	External	（L×W×H）	mm×mm×mm	700×700×60	
		Package	（L×W×H）	mm×mm×mm	740×750×115	
	Weight (Net / Shipping)			kg / kg	2.8 / 4.8	
PIPING	Refrigerant	Type			R410A	
	Pipe	Liquid		mm	φ6.35(1/4)	
		Gas		mm	φ9.52(3/8)	
	Connecting Method				flared	

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃ DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

Item				Model	AD09LS1ERA	
Function					cooling	heating
Capacity				kW	2.6	2.9
Sensible heat ratio					0.71	/
Dehumidifying capacity				10 - ³×m³/h	1.6	
Indoor unit	Power Supply				1PH,220-230V 50-60HZ	
	Fan	Type × Number			CENTRIFUGALX1	
		Speed(H-M-L)		r/min	1000/900/800±50	
		Fan motor output power		kW	0.05	
		Air-flow(H-M-L)		m³/h	550/450/400	
	Static pressure			Pa	25	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ7	
		Total Area		m²	0.11	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	610×483×220	
		Package	（L×W×H）	mm×mm×mm	695×536×265	
	Drainage pipe (material , I.D./O.D.)			mm	20/24	
	Control type (Remote / Wired)				wired	
	Fresh air hole dimension			mm	NONE	
	Electricity Heater			kW	NONE	
	Noise level (H-M-L)			dB(A)	37/34/31	
	Weight (Net / Shipping)			kg / kg	14/16	
PIPING	Refrigerant	Type			R410A	
	Pipe	Liquid		mm	φ6.35(1/4)	
		Gas		mm	φ9.52(3/8)	
	Connecting Method				flared	

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

Item				Model	AB12CS1ERA	
Function					cooling	heating
Capacity				kW	3.5(0.9--4.5)	3.7(1.0---4.8)
Sensible heat ratio					0.71	
Dehumidifying capacity				10 - ³×m³/h	1.5	
Indoor unit	Power Supply				1PH,220-230V 50-60HZ	
	Fan	Type × Number			CENTRIFUGALX1	
		Speed(H-M-L)		r/min	690/620/560	
		Fan motor output power		kW	0.03	
		Air-flow(H-M-L)		m³/h	620/520/450	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/ϕ7	
		Total Area		m²	0.272	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	570×570×260	
		Package	（L×W×H）	mm×mm×mm	718×680×380	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 26/32	
	Control type (Remote /wired)				Remote, YR-HD	
	Fresh air hole dimension			mm	56	
	Electricity Heater			kW	NONE	
	Noise level (H-M-L)			dB(A)	40/36/32	
	Weight (Net / Shipping)			kg / kg	18.5/23	
Panel	Panel model (color)				PB-700IB（WHITE）	
	Dimension	External	（L×W×H）	mm×mm×mm	700×700×60	
		Package	（L×W×H）	mm×mm×mm	740×750×115	
	Weight (Net / Shipping)			kg / kg	3.5/4.5	
PIPING	Refrigerant	Type			R410A	
	Pipe	Liquid		mm	φ6.35(1/4)	
		Gas		mm	φ9.52(3/8)	
	Connecting Method				flared	

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

Item				Model	AC12CS1ERA	
Function					cooling	heating
Capacity				kW	3.5(0.9--4.5)	3.9(1.0---4.8)
Sensible heat ratio					0.71	/
Dehumidifying capacity				10 - ³×m³/h	1.6	
Indoor unit	Power Supply				1PH,220-230V 50-60HZ	
	Fan	Type × Number			CENTRIFUGALX2	
		Speed(H-M-L)		r/min	1100/1025/825	
		Fan motor output power		kW	0.09	
		Air-flow(H-M-L)		m³/h	650/550/450	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ7	
		Total Area		m²	0.20	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	990×655×199	
		Package	（L×W×H）	mm×mm×mm	1150×750×300	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 18/20	
	Control type (Remote /wired)				Remote, YR-HD	
	Fresh air hole dimension			mm	NONE	
	Electricity Heater			kW	NONE	
	Noise level (H-M-L)			dB(A)	41/37/33	
	Weight (Net / Shipping)			kg / kg	26.3/32.3	
PIPING	Refrigerant	Type			R410A	
	Pipe	Liquid		mm	φ6.35(1/4)	
		Gas		mm	φ9.52(3/8)	
	Connecting Method				flared	

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

Item				Model	AD12LS1ERA	
Function					cooling	heating
Capacity				kW	3.5(0.9--4.5)	4.0(1.0---4.8)
Sensible heat ratio					0.71	
Dehumidifying capacity				10 - ³×m³/h	1.6	
Indoor unit	Power Supply				1PH,220-230V 50-60HZ	
	Fan	Type × Number			CENTRIFUGALX1	
		Speed(H-M-L)		r/min	1000/900/800±50	
		Fan motor output power		kW	0.05	
		Air-flow(H-M-L)		m³/h	550/450/400	
	Static pressure			Pa	25	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ7	
		Total Area		m²	0.11	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	610×483×220	
		Package	（L×W×H）	mm×mm×mm	695×536×265	
	Drainage pipe (material , I.D./O.D.)			mm	20/24	
	Control type (Remote /wired)				wired, YR-E14	
	Fresh air hole dimension			mm	NONE	
	Electricity Heater			kW	NONE	
	Noise level (H-M-L)			dB(A)	37/34/31	
	Weight (Net / Shipping)			kg / kg	14/16	
PIPING	Refrigerant	Type			R410A	
	Pipe	Liquid		mm	φ6.35(1/4)	
		Gas		mm	φ9.52(3/8)	
	Connecting Method				flared	

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

Item				Model	AB18CS1ERA	
Function					cooling	heating
Capacity				kW	5.0(1.8--5.8)	5.2(2.0---6.5)
Sensible heat ratio					0.71	/
Dehumidifying capacity				10 - ³×m³/h	1.8	
Indoor unit	Power Supply				1PH,220-230V 50-60HZ	
	Fan	Type × Number			centrifugal*1	
		Speed(H-M-L)		r/min	795/690/550±50	
		Fan motor output power		kW	0.065	
		Air-flow(H-M-L)		m³/h	680/620/500	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/ϕ7	
		Total Area		m²	0.272	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	570×570×260	
		Package	（L×W×H）	mm×mm×mm	718×680×380	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 26/32	
	Control type (Remote /wired)				Remote, YR-HD	
	Fresh air hole dimension			mm	56	
	Electricity Heater			kW	NONE	
	Noise level (H-M-L)			dB(A)	42/37/35	
	Weight (Net / Shipping)			kg / kg	18.5/23	
Panel	Panel model (color)				**PB-700IB（WHITE）**	
	Dimension	External	（L×W×H）	mm×mm×mm	700×700×60	
		Package	（L×W×H）	mm×mm×mm	740×750×115	
	Weight (Net / Shipping)			kg / kg	3.5/4.5	
PIPING	Refrigerant	Type			R410A	
	Pipe	Liquid		mm	Φ6.35	
		Gas		mm	Φ12.7	
	Connecting Method				FLARED	

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

Item				Model	AC18CS1ERA	
Function					cooling	heating
Capacity				kW	5.0(1.8--5.8)	5.5(2.0---6.5)
Sensible heat ratio					0.71	/
Dehumidifying capacity				10 - ³×m³/h	1.8	
Indoor unit	Power Supply				1PH,220-230V 50-60HZ	
	Fan	Type × Number			CENTRIFUGALX2	
		Speed(H-M-L)		r/min	1220/1190/1050	
		Fan motor output power		kW	0.075	
		Air-flow(H-M-L)		m³/h	800/720/650	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ7	
		Total Area		m²	0.45	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	990×655×199	
		Package	（L×W×H）	mm×mm×mm	1150×750×300	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 18/20	
	Control type (Remote /wired)				Remote, YR-HD	
	Fresh air hole dimension			mm	/	
	Electricity Heater			kW	/	
	Noise level (H-M-L)			dB(A)	44/41/36	
	Weight (Net / Shipping)			kg / kg	28.3/34.3	
PIPING	Refrigerant	Type			R410A	
	Pipe	Liquid		mm	Φ6.35	
		Gas		mm	Φ12.7	
	Connecting Method				FLARED	

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

Item				Model	AD18LS1ERA	
Function					cooling	heating
Capacity				kW	5.0(1.8---6.0)	5.5(2.0---6.2)
Sensible heat ratio					0.73	/
Dehumidifying capacity				10 - ³×m³/h	2.1	
Indoor unit	Power Supply				1PH,220-230V 50-60HZ	
	Fan	Type × Number			centrifugal fan X 2	
		Speed(H-M-L)		r/min	700±30 / 540±30 / 400±30	
		Fan motor output power		kW	50	
		Air-flow(H-M-L)		m³/h	850/780/600	
	Static pressure			Pa	25	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ7	
		Total Area		m²	0.34	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	1090×500×220	
		Package	（L×W×H）	mm×mm×mm	1174×549×294	
	Drainage pipe (material , I.D./O.D.)			mm	20/24	
	Control type (Remote /wired)				wired, YR-E14	
	Noise level (H-M-L)			dB(A)	41/35/32	
	Weight (Net / Shipping)			kg / kg	23/26.5	
PIPING	Refrigerant	Type			R410A	
	Pipe	Liquid		mm	Φ6.35	
		Gas		mm	Φ12.7	
	Connecting Method				FLARED	

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

Item					Model	AB24ES1ERA	
Function						cooling	heating
Capacity					kW	6.5（2.0---7.3）	7.1（2.5--8.0））
Sensible heat ratio						0.72	/
Dehumidifying capacity					10 - ³×m³/h	2.5	
Indoor unit	Power Supply					1PH,220-230VAC,50HZ	
	Fan	Type × Number				centrifugal*1	
		Speed(H-M-L)			r/min	670±40/550±50/460±50	
		Fan motor output power			kW	0.16	
		Air-flow(H-M-L)			m³/h	1300/1100/870	
	Heat exchanger	Type / Diameter			mm	inner grooved pipe/φ7	
		Total Area			m²	0.49	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	840*840*240	
		Package	（L×W×H）		mm×mm×mm	910*910*300	
	Drainage pipe (material , I.D./O.D.)				mm	PVC 26/32	
	Control type (Remote /wired)					remote, YR-HD	
	Fresh air hole dimension				mm	none	
	Noise level (H-M-L)				dB(A)	46/43/39	
	Weight (Net / Shipping)				kg / kg	26.8/32.6	
Panel	Panel model (color)					**PB-950JB (WHITE)**	
	Dimension	External	（L×W×H）		mm×mm×mm	950/950/80	
		Package	（L×W×H）		mm×mm×mm	985/985/115	
	Weight (Net / Shipping)				kg / kg	6.0/9.0	
PIPING	Refrigerant	Type				R410A	
	Pipe	Liquid			mm	9.52	
		Gas			mm	15.88	
	Connecting Method					flared	

Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

Item				Model	AC24CS1ERA	
Function					cooling	heating
Capacity				kW	6.3(2.0-7.3)	7.1(2.5-8.0)
Sensible heat ratio					0.72	/
Dehumidifying capacity				10 - ³×m³/h	2.0	
Indoor unit	Power Supply				1PH,220-230VAC,50HZ	
	Fan	Type × Number			centrifugal*2	
		Speed(H-M-L)		r/min	1220±40/1190±50/1050±50/980±50	
		Fan motor output power		kW	0.10	
		Air-flow(H-M-L)		m³/h	800/720/650	
	Heat exchanger	Type / Diameter		mm	inner grooved pipe/φ7	
		Total Area		m²	0.49	
		Temp. scope		℃	2-7	
	Dimension	External	（L×W×H）	mm×mm×mm	990*665*199	
		Package	（L×W×H）	mm×mm×mm	1150*750*300	
	Drainage pipe (material , I.D./O.D.)			mm	PVC 18/20	
	Control type (Remote /wired)				remote, YR-HD	
	Noise level (H-M-L)			dB(A)	48/46/44	
	Weight (Net / Shipping)			kg / kg	28.3/34.3	
PIPING	Refrigerant	Type			R410A	
	Pipe	Liquid		mm	9.52	
		Gas		mm	15.88	
	Connecting Method				flared	

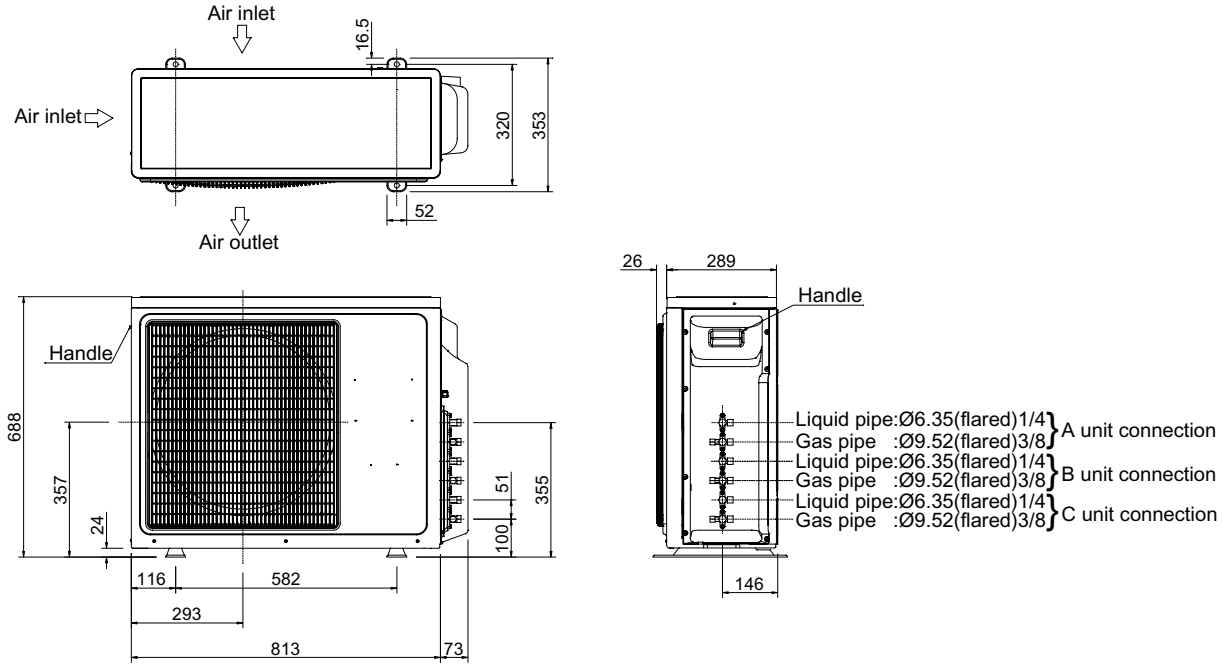
Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

Item				Model		AD24LS1ERA	
Function						cooling	heating
Capacity					kW	6.8（2.0---7.6）	7.1（3.0---8.3）
Sensible heat ratio						0.72	/
Dehumidifying capacity					10 - ³×m³/h	2.2	
Indoor unit	Power Supply					1PH,220-230VAC,50HZ	
	Fan	Type × Number				centrifugal*2	
		Speed(H-M-L)			r/min	1250±40/1130±40/1000±50/850±50	
		Fan motor output power			kW	0.05	
		Air-flow(H-M-L)			m³/h	1200/1050/850（white terminal 0 Pa）	
	Static pressure				Pa	25	
	Heat exchanger	Type / Diameter			mm	inner grooved pipe/φ7	
		Total Area			m²	0.51	
		Temp. scope			℃	2-7	
	Dimension	External	（L×W×H）		mm×mm×mm	1090*500*220	
		Package	（L×W×H）		mm×mm×mm	1174*549*294	
	Drainage pipe (material , I.D./O.D.)				mm	20/24	
	Control type (Remote /wired)					wired, YR-E14	
	Noise level (H-M-L)				dB(A)	49/45/41/37	
	Weight (Net / Shipping)				kg / kg	25.2/28.4	
PIPING	Refrigerant	Type				R410A	
	Pipe	Liquid			mm	9.52	
		Gas			mm	15.88	
	Connecting Method					flared	

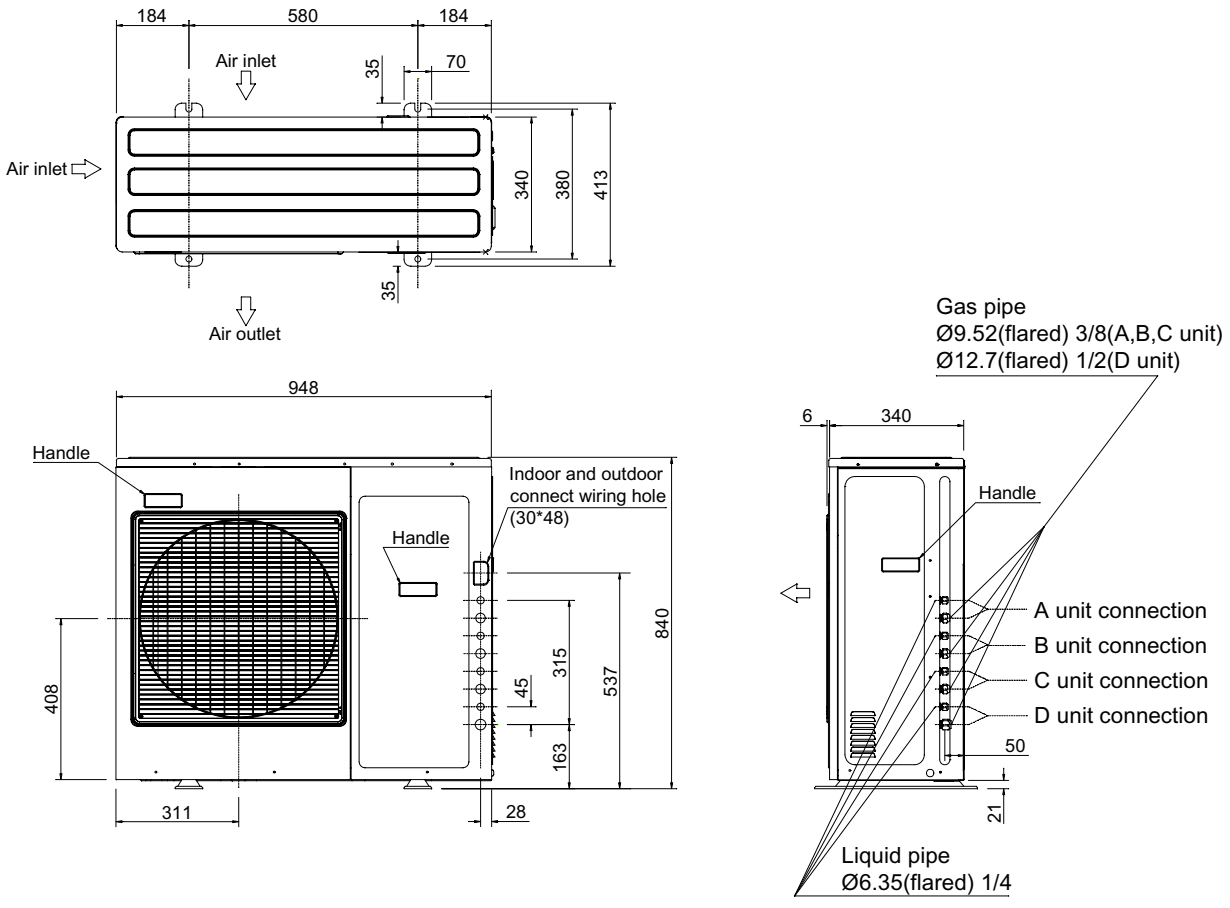
Norminal condition: indoor temperature (cooling): 27℃DB/19℃WB, indoor temperature (heating): 20℃DB
Outdoor temperature(cooling): 35℃DB/24℃WB, outdoor temperature(heating): 7℃DB/6℃WB
The noise level will be measured in the third octave band limited values, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

3. Dimension

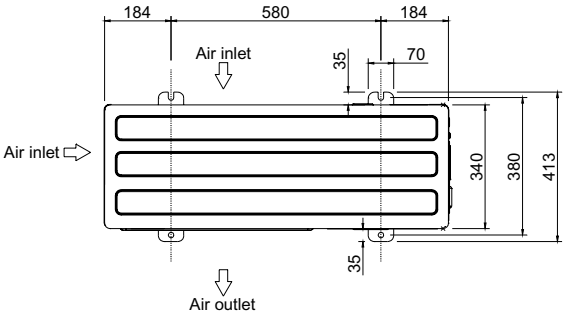
3U19FS1ERA:

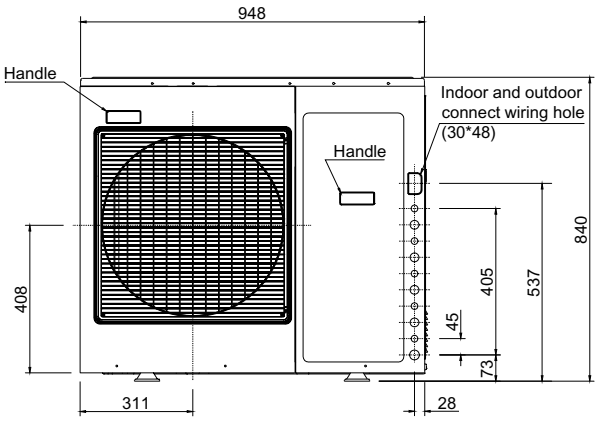


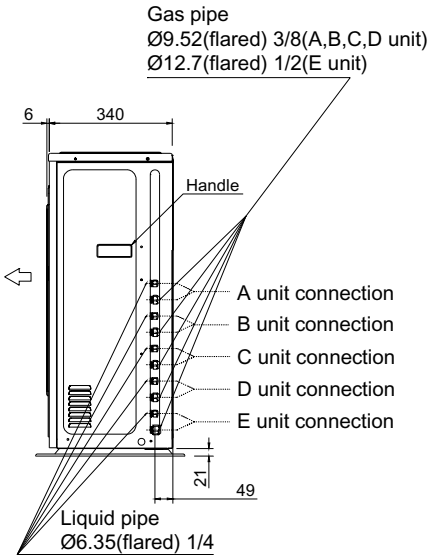
4U25HS1ERA, 4U30HS1ERA:



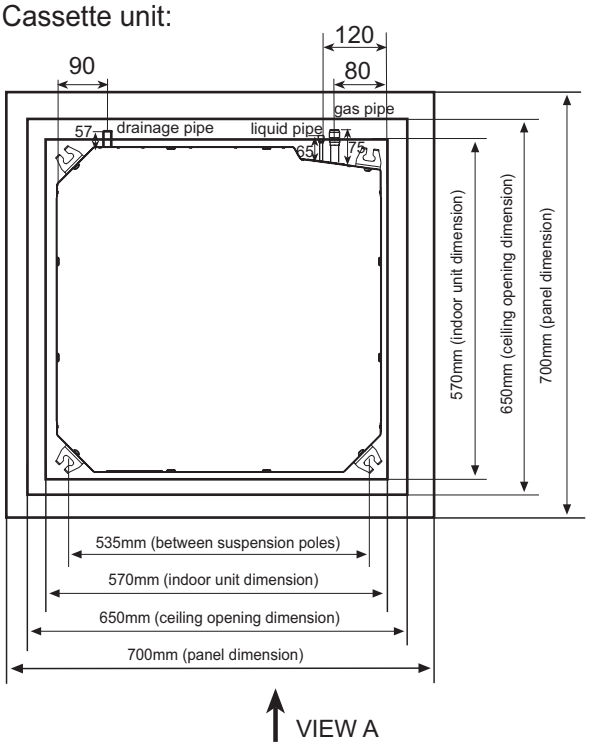
5U34HS1ERA:

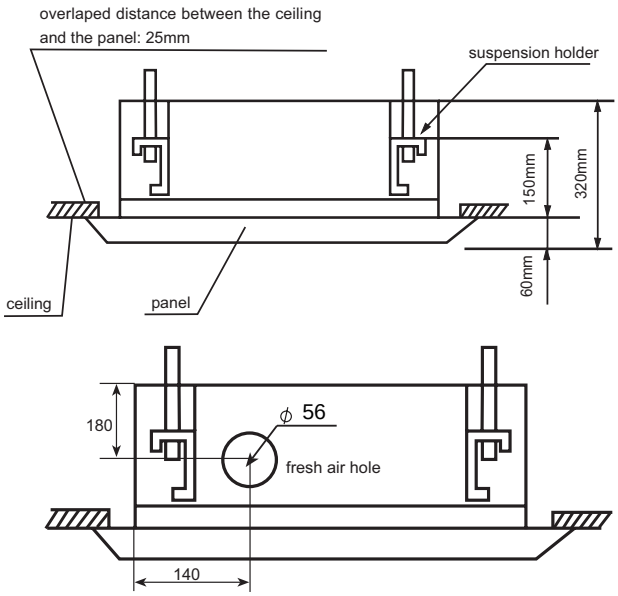

184
580
184
Air inlet
35
70
Air inlet
340
380
413
35
Air outlet


948
Handle
Indoor and outdoor
connect wiring hole
(30*48)
Handle
408
405
537
840
45
73
311
28

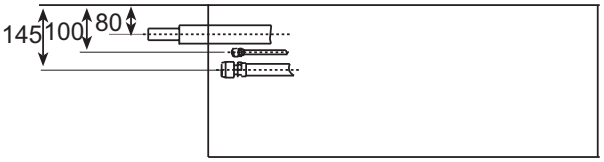

Gas pipe
Ø9.52(flared) 3/8(A,B,C,D unit)
Ø12.7(flared) 1/2(E unit)
6
340
Handle
A unit connection
B unit connection
C unit connection
D unit connection
E unit connection
21
49
Liquid pipe
Ø6.35(flared) 1/4

Cassette unit:

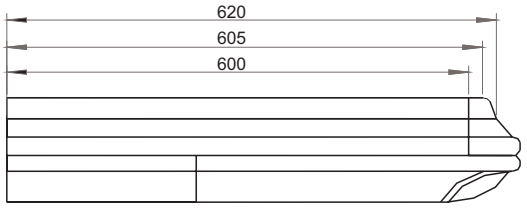


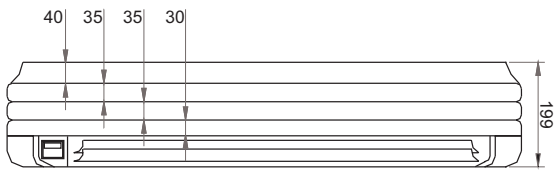


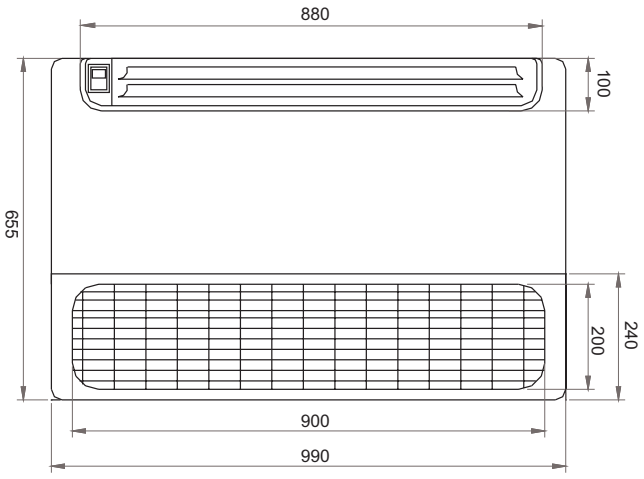
VIEW A



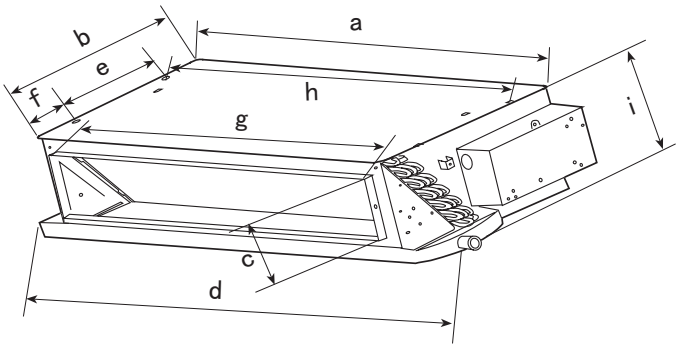
Convertible unit:







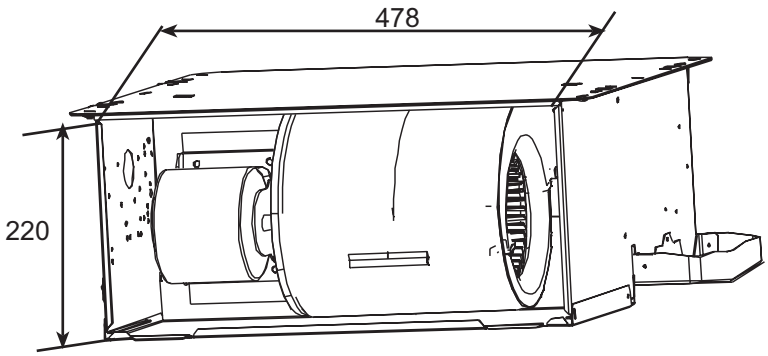
Ceiling concealed type unit:



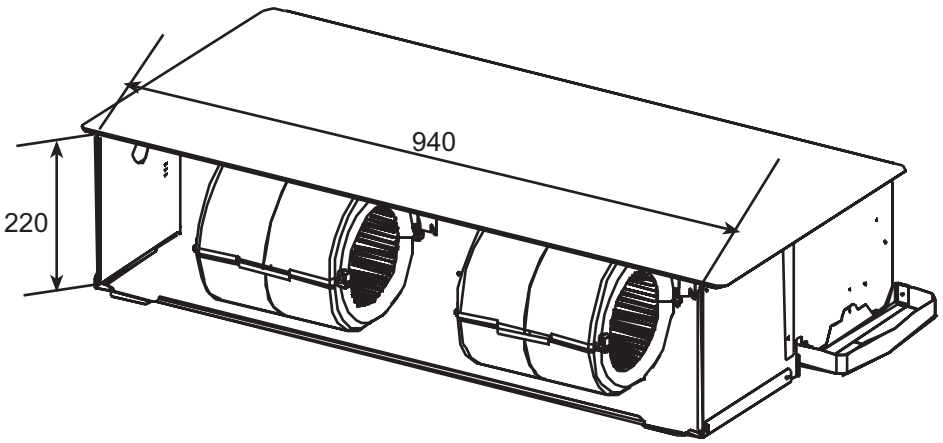
Installation dimension:(mm)

Unit model	a	b	c	d	e	f	g	h	i
AD092LS1ERA AD122LS1ERA	538	483.5	131	610	255	105	418	508	220
AD142LS1ERA AD182LS1ERA	1002	483.5	131	1105	255	105	880	970	220

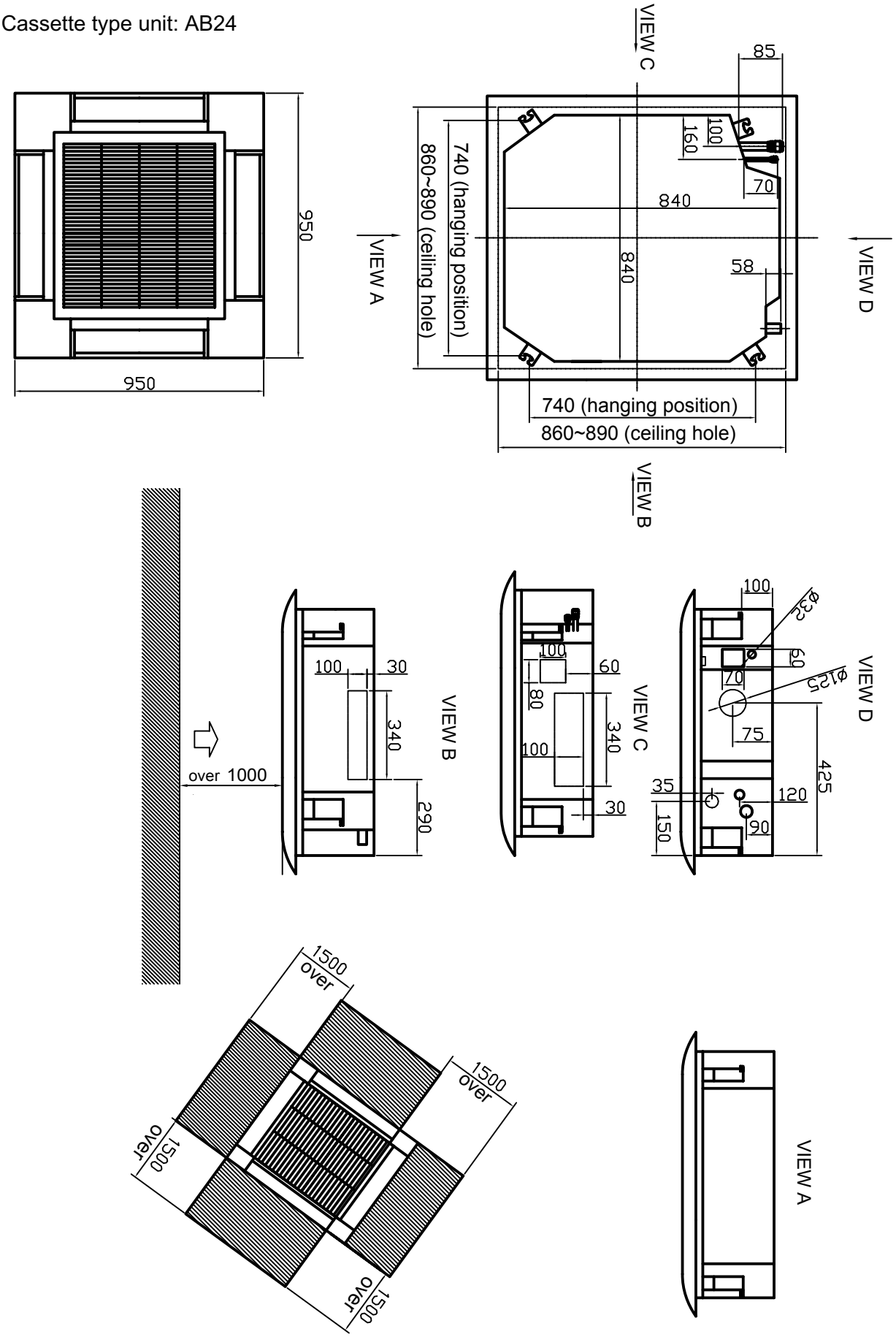
AD092LS1ERA
AD122LS1ERA



AD142LS1ERA
AD182LS1ERA



Cassette type unit: AB24



4. Pipe and wiring installation

4.1 Multi combination and the data

3U19FS1ERA combination and the data

COOLING

Comb.	Combinations			Rated capacity(Kw) (Nom. cooling)			total cooling capacity(kW)			total power input (kW)			total current (A)@230V			EER (W/W)	energy label
	Unit A	Unit B	Unit C	Unit A	Unit B	Unit C	min. data	rated data	max. data	min. data	rated data	max. Data	min. data	rated data	max. Data	rated capacity	
1x1	7	—	—	2.0	—	—	1.00	2.00	2.80	0.50	0.55	1.30	2.22	2.44	5.80	3.64	A
	9	—	—	2.5	—	—	1.00	2.50	3.10	0.50	0.70	1.34	2.22	3.11	6.00	3.57	A
	12	—	—	3.5	—	—	1.00	3.50	4.10	0.50	1.00	1.50	2.22	4.44	6.70	3.50	A
	18	—	—	5.0	—	—	1.50	5.00	5.40	0.50	1.50	1.90	2.22	6.65	8.40	3.33	A
	24	—	—	5.4	—	—	1.50	5.40	6.50	0.50	1.70	2.00	2.22	7.54	8.90	3.18	B
BI (1x2)	7	7	—	2.00	2.00	—	1.00	4.00	4.40	0.50	1.30	2.60	2.22	5.77	12.00	3.08	B
	7	9	—	2.00	2.50	—	1.00	4.50	4.90	0.50	1.50	2.60	2.22	6.65	12.00	3.00	B
	7	12	—	1.96	3.44	—	1.00	5.40	5.80	0.50	1.65	2.60	2.22	7.32	12.00	3.27	A
	7	18	—	1.54	3.86	—	1.50	5.40	7.00	0.50	1.65	2.60	2.22	7.32	12.00	3.27	A
	9	9	—	2.50	2.50	—	1.00	5.00	7.00	0.50	1.55	2.60	2.22	6.88	12.00	3.23	A
	9	12	—	2.25	3.15	—	1.50	5.40	7.00	0.50	1.57	2.60	2.22	6.94	12.00	3.45	A
	9	18	—	1.80	3.60	—	1.50	5.40	7.00	0.50	1.65	2.60	2.22	7.32	12.00	3.27	A
	12	12	—	2.70	2.70	—	1.50	5.40	7.00	0.50	1.57	2.60	2.22	6.94	12.00	3.45	A
	12	18	—	2.22	3.18	—	1.50	5.40	7.00	0.50	1.65	2.60	2.22	7.32	12.00	3.27	A
TRI (1x3)	7	7	7	1.80	1.80	1.80	1.50	5.40	7.00	0.50	1.65	2.60	2.22	7.32	12.00	3.27	A
	7	7	9	1.66	1.66	2.08	1.50	5.40	7.00	0.50	1.65	2.60	2.22	7.32	12.00	3.27	A
	7	7	12	1.44	1.44	2.52	1.50	5.40	7.00	0.50	1.65	2.60	2.22	7.32	12.00	3.27	A
	7	7	18	1.20	1.20	3.00	1.50	5.40	7.00	0.50	1.65	2.60	2.22	7.32	12.00	3.27	A
	7	9	9	1.54	1.93	1.93	1.50	5.40	7.00	0.50	1.60	2.60	2.22	7.10	12.00	3.37	A
	7	9	12	1.35	1.69	2.36	1.50	5.40	7.00	0.50	1.60	2.60	2.22	7.10	12.00	3.37	A
	7	12	12	1.20	2.10	2.10	1.50	5.40	7.00	0.50	1.60	2.60	2.22	7.10	12.00	3.38	A
	9	9	9	1.80	1.80	1.80	1.50	5.40	7.00	0.50	1.41	2.60	2.22	6.26	12.00	3.83	A
	9	9	12	1.59	1.59	2.22	1.50	5.40	7.00	0.50	1.41	2.60	2.22	6.24	12.00	3.84	A
	9	12	12	1.42	1.99	1.99	1.50	5.40	7.00	0.50	1.50	2.60	2.22	6.65	12.00	3.60	A

HEATING

Comb.	Combinations			Rated capacity(kW) (Nom. heating)			total heating capacity(KW)			total power input (W)			total current (A)@230V			EER (W/W)	energy label
	Unit A	Unit B	Unit C	Unit A	Unit B	Unit C	min. data	rated data	max. data	min. data	rated data	max. Data	min. data	rated data	max. Data	rated capacity	
1x1	7	—	—	2.3	—	—	1.00	2.30	4.00	0.47	0.60	1.50	2.09	2.66	5.80	3.83	A
	9	—	—	2.9	—	—	1.00	2.90	4.10	0.47	0.80	1.40	2.09	3.55	6.00	3.63	A
	12	—	—	3.8	—	—	1.00	3.80	4.10	0.47	1.10	1.50	2.09	4.88	6.70	3.45	A
	18	—	—	5.5	—	—	1.50	5.50	6.00	0.47	1.60	2.60	2.09	7.10	8.40	3.44	A
	24	—	—	6.5	—	—	1.50	6.50	7.00	0.47	1.80	2.60	2.09	7.99	8.90	3.61	A
BI (1x2)	7	7	—	2.30	2.30	—	1.20	4.60	5.00	0.47	1.35	2.30	2.50	5.99	10.20	3.41	B
	7	9	—	2.30	2.90	—	1.20	5.20	5.70	0.47	1.65	2.30	2.50	7.32	13.00	3.15	B
	7	12	—	2.30	3.80	—	1.20	6.10	6.50	0.47	1.65	2.30	2.50	7.32	13.00	3.70	A
	7	18	—	1.92	4.58	—	1.80	6.50	8.10	0.50	1.65	2.60	2.65	7.32	13.00	3.94	A
	9	9	—	2.90	2.90	—	1.80	5.80	8.10	0.50	1.60	2.60	2.65	7.10	13.00	3.63	A
	9	12	—	2.81	3.69	—	1.80	6.50	8.10	0.50	1.61	2.60	2.50	7.13	13.00	4.04	A
	9	18	—	2.24	4.26	—	1.80	6.50	8.10	0.50	1.65	2.60	2.50	7.32	13.00	3.94	A
	12	12	—	3.25	3.25	—	1.80	6.50	8.10	0.50	1.61	2.60	2.65	7.13	13.00	4.04	A
	12	18	—	2.66	3.84	—	1.80	6.50	8.10	0.50	1.65	2.60	2.65	7.32	13.00	3.94	A
TRI (1x3)	7	7	7	2.17	2.17	2.17	1.80	6.50	8.10	0.50	1.55	2.60	2.50	6.88	13.00	4.19	A
	7	7	9	1.99	1.99	2.51	1.80	6.50	8.10	0.50	1.60	2.60	2.65	7.10	13.00	4.06	A
	7	7	12	1.78	1.78	2.94	1.80	6.50	8.10	0.50	1.60	2.60	2.65	7.10	13.00	4.06	A
	7	7	18	1.48	1.48	3.54	1.80	6.50	8.10	0.50	1.65	2.60	2.50	7.32	13.00	3.94	A
	7	9	9	1.85	2.33	2.33	1.80	6.50	8.10	0.50	1.60	2.60	2.50	7.10	13.00	4.06	A
	7	9	12	1.66	2.09	2.74	1.80	6.50	8.10	0.50	1.55	2.60	2.50	6.88	13.00	4.19	A
	7	12	12	1.51	2.49	2.49	1.80	6.50	8.10	0.50	1.55	2.60	2.50	6.88	13.00	4.19	A
	9	9	9	2.17	2.17	2.17	1.80	6.50	8.10	0.50	1.53	2.60	2.50	6.79	13.00	4.25	A
	9	9	12	1.96	1.96	2.57	1.80	6.50	8.10	0.50	1.52	2.60	2.50	6.73	13.00	4.28	A
	9	12	12	1.80	2.35	2.35	1.80	6.50	8.10	0.50	1.55	2.60	2.50	6.88	13.00	4.19	A

4U25HS1ERA combination and the data

COOLING

Comb.	Combinations				Rated capacity Output/kW (Nom. cooling)				total cooling capacity(kW)			total power input (kW)			total current (A)@230V			EER (W/W)	energy label
	Unit A	Unit B	Unit C	Unit D	Unit A	Unit B	Unit C	Unit D	min. data	rated data	max. data	min. data	rated data	max. Data	min. data	rated data	max. Data	rated capacity	
1x1	7	—	—	—	2.0	—	—	—	1.00	2.00	2.80	0.50	0.56	1.30	2.22	2.48	5.80	3.57	A
	9	—	—	—	2.5	—	—	—	1.00	2.50	3.10	0.50	0.70	1.34	2.22	3.11	6.00	3.57	A
	12	—	—	—	3.5	—	—	—	1.00	3.50	4.10	0.50	1.00	1.50	2.22	4.44	6.70	3.50	A
	18	—	—	—	5.0	—	—	—	1.50	5.00	5.40	0.50	1.50	1.90	2.22	6.65	8.40	3.33	A
	24	—	—	—	6.5	—	—	—	1.50	6.50	7.40	0.50	2.00	3.00	2.22	8.87	13.20	3.25	A
BI (1x2)	7	18	—	—	2.00	5.00	—	—	1.00	7.00	7.40	0.50	2.25	3.50	2.15	10.87	16.80	3.11	B
	7	24	—	—	1.67	5.43	—	—	1.00	7.10	8.50	0.55	2.25	3.50	2.50	10.87	16.80	3.16	B
	9	18	—	—	2.37	4.73	—	—	1.00	7.10	7.90	0.50	2.25	3.50	2.15	10.87	16.80	3.16	B
	9	24	—	—	1.97	5.13	—	—	1.00	7.10	9.00	0.55	2.25	3.50	2.50	10.87	16.80	3.16	B
	12	12	—	—	3.50	3.50	—	—	1.00	7.00	6.80	0.50	2.19	3.50	2.15	10.57	16.80	3.20	A
	12	18	—	—	3.13	4.47	—	—	1.00	7.60	8.40	0.50	2.19	3.50	2.15	10.57	16.80	3.47	A
	12	24	—	—	2.66	4.94	—	—	1.00	7.60	9.00	0.55	2.39	3.50	2.50	11.53	16.80	3.18	B
	18	18	—	—	3.80	3.80	—	—	1.00	7.60	8.60	0.55	2.39	3.50	2.50	11.53	16.80	3.18	B
	18	24	—	—	3.30	4.30	—	—	1.00	7.60	9.00	0.55	2.40	3.50	2.50	11.58	16.80	3.17	B
TRI (1x3)	7	7	9	—	2.00	2.00	2.50	—	1.20	6.50	7.10	0.55	2.00	3.50	2.50	9.66	16.80	3.25	A
	7	7	12	—	2.00	2.00	3.50	—	1.20	7.50	8.10	0.55	2.19	3.50	2.50	10.57	16.80	3.43	A
	7	7	18	—	1.69	1.69	4.22	—	1.20	7.60	8.80	0.55	2.34	3.50	2.50	11.29	16.80	3.25	A
	7	7	24	—	1.45	1.45	4.70	—	1.20	7.60	9.00	0.55	2.34	3.50	3.50	11.29	16.80	3.25	A
	7	9	9	—	2.00	2.50	2.50	—	1.20	7.00	7.10	0.55	2.14	3.50	2.50	10.32	16.80	3.28	A
	7	9	12	—	1.90	2.38	3.33	—	1.20	7.60	8.60	0.55	2.19	3.50	2.50	10.57	16.80	3.48	A
	7	9	18	—	1.60	2.00	4.00	—	1.20	7.60	8.80	0.55	2.34	3.50	2.50	11.29	16.80	3.25	A
	7	12	12	—	1.69	2.96	2.96	—	1.20	7.60	8.60	0.55	2.19	3.50	2.50	10.57	16.80	3.47	A
	7	12	18	—	1.45	2.53	3.62	—	1.20	7.60	8.80	0.55	2.34	3.50	2.50	11.29	16.80	3.25	A
	9	9	9	—	2.50	2.50	2.50	—	1.20	7.50	8.10	0.55	2.14	3.50	2.50	10.32	16.80	3.51	A
	9	9	12	—	2.24	2.24	3.13	—	1.20	7.60	8.60	0.55	2.14	3.50	2.50	10.32	16.80	3.56	A
	9	9	18	—	1.90	1.90	3.80	—	1.20	7.60	8.80	0.55	2.14	3.50	2.50	10.32	16.80	3.56	A
	9	12	12	—	2.00	2.80	2.80	—	1.20	7.60	8.60	0.55	2.14	3.50	2.50	10.32	16.80	3.56	A
	12	12	12	—	2.53	2.53	2.53	—	1.20	7.60	8.50	0.55	2.14	3.50	2.50	10.32	16.80	3.56	A
	12	12	18	—	2.22	2.22	3.17	—	1.20	7.60	8.50	0.55	2.19	3.50	2.50	10.57	16.80	3.47	A
QUADRI(1x4)	7	7	7	7	1.90	1.90	1.90	1.90	1.50	7.60	9.00	0.55	2.14	3.50	2.85	10.32	16.80	3.56	A
	7	7	7	9	1.79	1.79	1.79	2.24	1.50	7.60	9.00	0.55	2.14	3.50	2.85	10.32	16.80	3.56	A
	7	7	7	12	1.60	1.60	1.60	2.80	1.50	7.60	9.00	0.55	2.14	3.50	2.85	10.32	16.80	3.56	A
	7	7	7	18	1.38	1.38	1.38	3.45	1.50	7.60	9.00	0.55	2.19	3.50	2.85	10.57	16.80	3.47	A
	7	7	9	9	1.69	1.69	2.11	2.11	1.50	7.60	9.00	0.55	2.14	3.50	2.85	10.32	16.80	3.56	A
	7	7	9	12	1.52	1.52	1.90	2.66	1.50	7.60	9.00	0.55	2.14	3.50	2.85	10.32	16.80	3.56	A
	7	9	9	9	1.60	2.00	2.00	2.00	1.50	7.60	9.00	0.55	2.14	3.50	2.85	10.32	16.80	3.56	A
	7	9	9	12	1.45	1.81	1.81	2.53	1.50	7.60	9.00	0.55	2.10	3.50	2.85	10.13	16.80	3.62	A
	9	9	9	9	1.90	1.90	1.90	1.90	1.50	7.60	9.00	0.55	2.10	3.50	2.85	10.13	16.80	3.62	A
	9	9	9	12	1.73	1.73	1.73	2.42	1.50	7.60	9.00	0.55	2.10	3.50	2.85	10.13	16.80	3.62	A

4U25HS1ERA combination and the data

HEATING

Comb.	Combinations				Rated capacity Output/kW (Nom. heating)				total heating capacity(KW)			total power input (W)			total current (A)@230V			EER (W/W)	energy label
	Unit A	Unit B	Unit C	Unit D	Unit A	Unit B	Unit C	Unit D	min. data	rated data	max. data	min. data	rated data	max. Data	min. data	rated data	max. Data	rated capacity	
1x1	7	—	—	—	2.3	—	—	—	1.00	2.30	4.00	0.55	0.60	1.50	2.44	2.66	5.80	3.83	A
	9	—	—	—	2.9	—	—	—	1.00	2.90	4.10	0.55	0.80	1.40	2.44	3.55	6.00	3.63	A
	12	—	—	—	3.8	—	—	—	1.00	3.80	4.10	0.55	1.10	1.50	2.44	4.88	6.70	3.45	A
	18	—	—	—	5.5	—	—	—	1.50	5.50	6.00	0.55	1.60	2.60	2.44	7.10	8.40	3.44	A
	24	—	—	—	7.0	—	—	—	1.50	7.00	8.60	0.55	1.91	2.60	2.44	8.47	8.90	3.67	A
BI (1x2)	7	18	—	—	2.30	5.50	—	—	1.20	7.80	8.40	0.50	2.20	3.50	2.15	9.76	16.80	3.55	B
	7	24	—	—	2.13	6.47	—	—	1.20	8.60	9.50	0.55	2.31	3.50	2.50	10.24	16.80	3.72	A
	9	18	—	—	2.90	5.50	—	—	1.20	8.40	9.20	0.50	2.20	3.50	2.15	9.76	16.80	3.82	A
	9	24	—	—	2.52	6.08	—	—	1.20	8.60	9.50	0.55	2.31	3.50	2.50	10.24	16.80	3.72	A
	12	12	—	—	3.80	3.80	—	—	1.20	7.60	8.20	0.50	2.15	3.50	2.15	9.54	16.80	3.53	B
	12	18	—	—	3.51	5.09	—	—	1.20	8.60	9.50	0.50	2.30	3.50	2.15	10.20	16.80	3.74	A
	12	24	—	—	3.03	5.57	—	—	1.20	8.60	9.50	0.55	2.31	3.50	2.50	10.24	16.80	3.72	A
	18	18	—	—	4.30	4.30	—	—	1.20	8.60	9.50	0.55	2.20	3.50	2.50	9.76	16.80	3.91	A
	18	24			3.78	4.82			1.50	8.60	9.50	0.55	2.40	3.50	2.50	10.65	16.80	3.58	B
TRI (1x3)	7	7	9	—	2.30	2.30	2.90	—	1.50	7.50	8.40	0.55	2.16	3.50	2.50	9.58	16.80	3.47	B
	7	7	12	—	2.30	2.30	3.80	—	1.50	8.40	9.30	0.55	2.16	3.50	2.50	9.58	16.80	3.89	A
	7	7	18	—	1.96	1.96	4.68	—	1.50	8.60	9.50	0.55	2.26	3.50	2.50	10.02	16.80	3.81	A
	7	7	24	—	1.71	1.71	5.19	—	1.80	8.60	9.50	0.55	2.31	3.50	2.50	10.24	16.80	3.72	A
	7	9	9	—	2.30	2.90	2.90	—	1.50	8.10	9.50	0.55	2.21	3.50	2.50	9.80	16.80	3.67	A
	7	9	12	—	2.20	2.77	3.63	—	1.50	8.60	9.50	0.55	2.21	3.50	2.50	9.80	16.80	3.89	A
	7	9	18	—	1.85	2.33	4.42	—	1.50	8.60	9.50	0.55	2.26	3.50	2.50	10.02	16.80	3.81	A
	7	12	12	—	2.00	3.30	3.30	—	1.50	8.60	9.50	0.55	2.21	3.50	2.50	9.80	16.80	3.89	A
	7	12	18	—	1.71	2.82	4.08	—	1.50	8.60	9.50	0.55	2.26	3.50	2.50	10.02	16.80	3.81	A
	9	9	9	—	2.87	2.87	2.87	—	1.50	8.60	9.50	0.55	2.21	3.50	2.50	9.80	16.80	3.89	A
	9	9	12	—	2.60	2.60	3.40	—	1.50	8.60	9.50	0.55	2.21	3.50	2.50	9.80	16.80	3.89	A
	9	9	18	—	2.21	2.21	4.19	—	1.50	8.60	9.50	0.55	2.26	3.50	2.50	10.02	16.80	3.81	A
	9	12	12	—	2.38	3.11	3.11	—	1.50	8.60	9.50	0.55	2.11	3.50	2.50	9.36	16.80	4.08	A
	12	12	12	—	2.87	2.87	2.87	—	1.50	8.60	9.50	0.55	2.26	3.50	2.50	10.02	16.80	3.81	A
	12	12	18	—	2.49	2.49	3.61	—	1.50	8.60	9.50	0.55	2.31	3.50	2.50	10.24	16.80	3.72	A
QUADRI(1x4)	7	7	7	7	2.15	2.15	2.15	2.15	1.80	8.60	9.50	0.55	2.21	3.50	2.85	9.80	16.80	3.89	A
	7	7	7	9	2.02	2.02	2.02	2.54	1.80	8.60	9.50	0.55	2.21	3.50	2.85	9.80	16.80	3.89	A
	7	7	7	12	1.85	1.85	1.85	3.05	1.80	8.60	9.50	0.55	2.16	3.50	2.85	9.58	16.80	3.98	A
	7	7	7	18	1.60	1.60	1.60	3.81	1.80	8.60	9.50	0.55	2.21	3.50	2.85	9.80	16.80	3.89	A
	7	7	9	9	1.90	1.90	2.40	2.40	1.80	8.60	9.50	0.55	2.21	3.50	2.85	9.80	16.80	3.89	A
	7	7	9	12	1.75	1.75	2.21	2.89	1.80	8.60	9.50	0.55	2.21	3.50	2.85	9.80	16.80	3.89	A
	7	9	9	9	1.80	2.27	2.27	2.27	1.80	8.60	9.50	0.55	2.11	3.50	2.85	9.36	16.80	4.08	A
	7	9	9	12	1.66	2.10	2.10	2.75	1.80	8.60	9.50	0.55	2.11	3.50	2.85	9.36	16.80	4.08	A
	9	9	9	9	2.15	2.15	2.15	2.15	1.80	8.60	9.50	0.55	2.06	3.50	2.85	9.13	16.80	4.18	A
	9	9	9	12	2.00	2.00	2.00	2.61	1.80	8.60	9.50	0.55	2.11	3.50	2.85	9.36	16.80	4.08	A

4U30HS1ERA combination and the data

COOLING

Comb.	Combinations				Rated capacity Output/kW (Nom. cooling)				total cooling capacity(kW)			total power input (kW)			total current (A)@230V			EER (W/W)	energy label
	Unit A	Unit B	Unit C	Unit D	Unit A	Unit B	Unit C	Unit D	min. data	rated data	max. data	min. data	rated data	max. Data	min. data	rated data	max. Data	rated capacity	
1x1	7	—	—	—	2.0	—	—	—	1.00	2.00	2.80	0.50	0.56	1.30	2.22	2.48	5.80	3.57	A
	9	—	—	—	2.5	—	—	—	1.00	2.50	3.10	0.50	0.70	1.34	2.22	3.11	6.00	3.57	A
	12	—	—	—	3.5	—	—	—	1.00	3.50	4.10	0.50	1.00	1.50	2.22	4.44	6.70	3.50	A
	18	—	—	—	5.0	—	—	—	1.50	5.00	5.40	0.50	1.50	1.90	2.22	6.65	8.40	3.33	A
	24	—	—	—	6.5	—	—	—	1.50	6.50	7.40	0.50	2.00	3.00	2.22	8.87	13.20	3.25	A
BI (1x2)	7	24			1.91	6.19			1.00	8.10	9.80	0.55	2.60	3.80	2.15	11.54	17.90	3.12	B
	9	18			2.50	5.00			1.00	7.50	9.80	0.55	2.40	3.80	2.15	10.65	17.90	3.13	B
	9	24			2.25	5.85			1.00	8.10	9.80	0.55	2.50	3.80	2.15	11.09	17.90	3.24	A
	12	18			3.16	4.94			1.00	8.10	9.80	0.55	2.40	3.80	2.15	10.65	17.90	3.37	A
	12	24			2.67	5.43			1.00	8.10	9.80	0.55	2.50	3.80	2.15	11.09	17.90	3.24	A
	18	18			4.05	4.05			1.00	8.10	9.80	0.55	2.40	3.80	2.15	10.65	17.90	3.38	A
	18	24			3.52	4.58			1.00	8.10	9.80	0.55	2.50	3.80	2.15	11.09	17.90	3.24	A
	24	24			4.05	4.05			1.00	8.10	9.80	0.55	2.60	3.80	2.15	11.54	17.90	3.12	B
TRI (1x3)	7	7	18		1.80	1.80	4.50		1.50	8.10	9.80	0.55	2.40	3.80	2.50	10.65	17.90	3.38	A
	7	7	24		1.54	1.54	5.01		1.50	8.10	9.80	0.55	2.50	3.80	2.50	11.09	17.90	3.24	A
	7	9	12		2.00	2.50	3.50		1.50	8.00	9.80	0.55	2.30	3.80	2.50	10.20	17.90	3.48	A
	7	9	18		1.71	2.13	4.26		1.50	8.10	9.80	0.55	2.40	3.80	2.50	10.65	17.90	3.37	A
	7	9	24		1.47	1.84	4.79		1.50	8.10	9.80	0.55	2.50	3.80	2.50	11.09	17.90	3.24	A
	7	12	12		1.80	3.15	3.15		1.50	8.10	9.80	0.55	2.40	3.80	2.50	10.65	17.90	3.38	A
	7	12	18		1.54	2.70	3.86		1.50	8.10	9.80	0.55	2.40	3.80	2.50	10.65	17.90	3.37	A
	7	12	24		1.35	2.36	4.39		1.50	8.10	9.80	0.55	2.50	3.80	2.50	11.09	17.90	3.24	A
	9	9	9		2.50	2.50	2.50		1.50	7.50	9.80	0.55	2.30	3.80	2.50	10.20	17.90	3.26	A
	9	9	12		2.38	2.38	3.34		1.50	8.10	9.80	0.55	2.35	3.80	2.50	10.43	17.90	3.44	A
	9	9	18		2.03	2.03	4.05		1.50	8.10	9.80	0.55	2.40	3.80	2.50	10.65	17.90	3.38	A
	9	9	24		1.76	1.76	4.58		1.50	8.10	9.80	0.55	2.50	3.80	2.50	11.09	17.90	3.24	A
	9	12	12		2.13	2.98	2.98		1.50	8.10	9.80	0.55	2.40	3.80	2.50	10.65	17.90	3.37	A
	9	12	18		1.84	2.58	3.68		1.50	8.10	9.80	0.55	2.40	3.80	2.50	10.65	17.90	3.37	A
	9	12	24		1.62	2.27	4.21		1.50	8.10	9.80	0.55	2.50	3.80	2.50	11.09	17.90	3.24	A
	12	12	12		2.70	2.70	2.70		1.50	8.10	9.80	0.55	2.40	3.80	2.50	10.65	17.90	3.38	A
	12	12	18		2.36	2.36	3.38		1.50	8.10	9.80	0.55	2.40	3.80	2.50	10.65	17.90	3.37	A
	12	12	24		2.10	2.10	3.90		1.50	8.10	9.80	0.55	2.45	3.80	2.50	10.87	17.90	3.31	A
	12	18	18		2.10	3.00	3.00		1.50	8.10	9.80	0.55	2.50	3.80	2.50	11.09	17.90	3.24	A
QUADRI(1x4)	7	7	7	7	2.00	2.00	2.00	2.00	1.50	8.00	9.80	0.55	2.25	3.80	2.85	9.98	17.90	3.56	A
	7	7	7	9	1.91	1.91	1.91	2.38	1.50	8.10	9.80	0.55	2.25	3.80	2.85	9.98	17.90	3.60	A
	7	7	7	12	1.71	1.71	1.71	2.98	1.50	8.10	9.80	0.55	2.25	3.80	2.85	9.98	17.90	3.60	A
	7	7	7	18	1.47	1.47	1.47	3.68	1.50	8.10	9.80	0.55	2.40	3.80	2.85	10.65	17.90	3.37	A
	7	7	7	24	1.30	1.30	1.30	4.21	1.50	8.10	9.80	0.55	2.50	3.80	2.85	11.09	17.90	3.24	A
	7	7	9	9	1.80	1.80	2.25	2.25	1.50	8.10	9.80	0.55	2.25	3.80	2.85	9.98	17.90	3.60	A
	7	7	9	12	1.62	1.62	2.03	2.84	1.50	8.10	9.80	0.55	2.25	3.80	2.85	9.98	17.90	3.60	A
	7	7	9	18	1.41	1.41	1.76	3.52	1.50	8.10	9.80	0.55	2.40	3.80	2.85	10.65	17.90	3.37	A
	7	7	9	24	1.25	1.25	1.56	4.05	1.50	8.10	9.80	0.55	2.45	3.80	2.85	10.87	17.90	3.31	A
	7	7	12	12	1.47	1.47	2.58	2.58	1.50	8.10	9.80	0.55	2.25	3.80	2.85	9.98	17.90	3.60	A
	7	7	12	18	1.30	1.30	2.27	3.24	1.50	8.10	9.80	0.55	2.40	3.80	2.85	10.65	17.90	3.38	A
	7	9	9	9	1.71	2.13	2.13	2.13	1.50	8.10	9.80	0.55	2.25	3.80	2.85	9.98	17.90	3.60	A
	7	9	9	12	1.54	1.93	1.93	2.70	1.50	8.10	9.80	0.55	2.28	3.80	2.85	10.12	17.90	3.55	A
	7	9	9	18	1.35	1.69	1.69	3.38	1.50	8.10	9.80	0.55	2.40	3.80	2.85	10.65	17.90	3.37	A
	7	9	12	12	1.41	1.76	2.47	2.47	1.50	8.10	9.80	0.55	2.30	3.80	2.85	10.20	17.90	3.52	A
	7	12	12	12	1.30	2.27	2.27	2.27	1.50	8.10	9.80	0.55	2.30	3.80	2.85	10.20	17.90	3.52	A
	9	9	9	9	2.03	2.03	2.03	2.03	1.50	8.10	9.80	0.55	2.22	3.80	2.85	9.85	17.90	3.65	A
	9	9	9	12	1.84	1.84	1.84	2.58	1.50	8.10	9.80	0.55	2.25	3.80	2.85	9.98	17.90	3.60	A
	9	9	12	12	1.69	1.69	2.36	2.36	1.50	8.10	9.80	0.55	2.25	3.80	2.85	9.98	17.90	3.60	A
	9	9	12	18	1.50	1.50	2.10	3.00	1.50	8.10	9.80	0.55	2.30	3.80	2.85	10.20	17.90	3.52	A
	9	12	12	12	1.56	2.18	2.18	2.18	1.50	8.10	9.80	0.55	2.35	3.80	2.85	10.43	17.90	3.45	A
	12	12	12	12	2.03	2.03	2.03	2.03	1.50	8.10	9.80	0.55	2.35	3.80	2.85	10.43	17.90	3.45	A

4U30HS1ERA combination and the data

HEATING

Comb.	Combinations				Rated capacity Output/kW (Nom. heating)				total heating capacity(KW)			total power input (W)			total current (A)@230V			EER (W/W)	energy label
	Unit A	Unit B	Unit C	Unit D	Unit A	Unit B	Unit C	Unit D	min. data	rated data	max. data	min. data	rated data	max. Data	min. data	rated data	max. Data	rated capacity	
1x1	7	—	—	—	2.3	—	—	—	1.00	2.30	4.00	0.55	0.60	1.50	2.44	2.66	5.80	3.83	A
	9	—	—	—	2.9	—	—	—	1.00	2.90	4.10	0.55	0.80	1.40	2.44	3.55	6.00	3.63	A
	12	—	—	—	3.8	—	—	—	1.00	3.80	4.10	0.55	1.10	1.50	2.44	4.88	6.70	3.45	A
	18	—	—	—	5.5	—	—	—	1.50	5.50	6.00	0.55	1.60	2.60	2.44	7.10	8.40	3.44	A
	24	—	—	—	7.0	—	—	—	1.50	7.00	8.60	0.55	1.80	2.60	2.44	7.99	8.90	3.89	A
BI (1x2)	7	24			2.30	7.00			1.20	9.30	10.50	0.50	2.60	3.80	2.15	11.54	15.00	3.58	B
	9	18			2.90	5.50			1.20	8.40	10.50	0.50	2.60	3.80	2.15	11.54	15.00	3.23	C
	9	24			2.87	6.93			1.20	9.80	10.50	0.50	2.70	3.80	2.15	11.98	15.00	3.63	A
	12	18			3.80	5.50			1.20	9.30	10.50	0.50	2.60	3.80	2.15	11.54	15.00	3.58	B
	12	24			3.45	6.35			1.20	9.80	10.50	0.50	2.70	3.80	2.15	11.98	15.00	3.63	A
	18	18			4.90	4.90			1.20	9.80	10.50	0.50	2.60	3.80	2.15	11.54	15.00	3.77	A
	18	24			4.31	5.49			1.20	9.80	10.50	0.50	2.70	3.80	2.15	11.98	15.00	3.63	A
	24	24			4.90	4.90			1.20	9.80	10.50	0.50	2.75	3.80	2.44	12.20	15.00	3.56	B
TRI (1x3)	7	7	18		2.23	2.23	5.34		1.20	9.80	10.50	0.55	2.60	3.80	2.50	11.54	15.00	3.77	A
	7	7	24		1.94	1.94	5.91		1.50	9.80	10.50	0.55	2.70	3.80	2.50	11.98	15.00	3.63	A
	7	9	12		2.30	2.90	3.80		1.50	9.00	10.50	0.55	2.60	3.80	2.50	11.54	15.00	3.46	B
	7	9	18		2.11	2.66	5.04		1.50	9.80	10.50	0.55	2.60	3.80	2.50	11.54	15.00	3.77	A
	7	9	24		1.85	2.33	5.62		1.50	9.80	10.50	0.55	2.70	3.80	2.50	11.98	15.00	3.63	A
	7	12	12		2.28	3.76	3.76		1.50	9.80	10.50	0.55	2.70	3.80	2.50	11.98	15.00	3.63	A
	7	12	18		1.94	3.21	4.65		1.50	9.80	10.50	0.55	2.60	3.80	2.50	11.54	15.00	3.77	A
	7	12	24		1.72	2.84	5.24		1.50	9.80	10.50	0.55	2.70	3.80	2.50	11.98	15.00	3.63	A
	9	9	9		2.90	2.90	2.90		1.50	8.70	10.50	0.55	2.20	3.80	2.50	9.76	15.00	3.95	A
	9	9	12		2.90	2.90	3.80		1.50	9.60	10.50	0.55	2.70	3.80	2.50	11.98	15.00	3.56	B
	9	9	18		2.52	2.52	4.77		1.50	9.80	10.50	0.55	2.43	3.80	2.50	10.78	15.00	4.03	A
	9	9	24		2.22	2.22	5.36		1.50	9.80	10.50	0.55	2.70	3.80	2.50	11.98	15.00	3.63	A
	9	12	12		2.71	3.55	3.55		1.50	9.80	10.50	0.55	2.70	3.80	2.50	11.98	15.00	3.63	A
	9	12	18		2.33	3.05	4.42		1.50	9.80	10.50	0.55	2.60	3.80	2.50	11.54	15.00	3.77	A
	9	12	24		2.07	2.72	5.01		1.50	9.80	10.50	0.55	2.70	3.80	2.50	11.98	15.00	3.63	A
	12	12	12		3.27	3.27	3.27		1.50	9.80	10.50	0.55	2.58	3.80	2.50	11.45	15.00	3.80	A
	12	12	18		2.84	2.84	4.11		1.50	9.80	10.50	0.55	2.60	3.80	2.50	11.54	15.00	3.77	A
	12	12	24		2.55	2.55	4.70		1.50	9.80	10.50	0.55	2.65	3.80	2.50	11.76	15.00	3.70	A
	12	18	18		2.52	3.64	3.64		1.50	9.80	10.50	0.55	2.75	3.80	2.50	12.20	15.00	3.56	B
QUADRI(1x4)	7	7	7	7	2.30	2.30	2.30	2.30	1.50	9.20	10.50	0.55	2.38	3.80	2.85	10.56	15.00	3.87	A
	7	7	7	9	2.30	2.30	2.30	2.90	1.50	9.80	10.50	0.55	2.70	3.80	2.85	11.98	15.00	3.63	A
	7	7	7	12	2.11	2.11	2.11	3.48	1.80	9.80	10.50	0.55	2.60	3.80	2.85	11.54	15.00	3.77	A
	7	7	7	18	1.82	1.82	1.82	4.35	1.80	9.80	10.50	0.55	2.60	3.80	2.85	11.54	15.00	3.77	A
	7	7	7	24	1.62	1.62	1.62	4.94	1.80	9.80	10.50	0.55	2.70	3.80	2.85	11.98	15.00	3.63	A
	7	7	9	9	2.17	2.17	2.73	2.73	1.80	9.80	10.50	0.55	2.60	3.80	2.85	11.54	15.00	3.77	A
	7	7	9	12	1.99	1.99	2.52	3.30	1.80	9.80	10.50	0.55	2.60	3.80	2.85	11.54	15.00	3.77	A
	7	7	9	18	1.73	1.73	2.19	4.15	1.80	9.80	10.50	0.55	2.60	3.80	2.85	11.54	15.00	3.77	A
	7	7	12	12	1.85	1.85	3.05	3.05	1.80	9.80	10.50	0.55	2.60	3.80	2.85	11.54	15.00	3.77	A
	7	7	12	18	1.62	1.62	2.68	3.88	1.80	9.80	10.50	0.55	2.60	3.80	2.85	11.54	15.00	3.77	A
	7	9	9	9	2.05	2.58	2.58	2.58	1.80	9.80	10.50	0.55	2.60	3.80	2.85	11.54	15.00	3.77	A
	7	9	9	12	1.89	2.39	2.39	3.13	1.80	9.80	10.50	0.55	2.60	3.80	2.85	11.54	15.00	3.77	A
	7	9	9	18	1.66	2.09	2.09	3.96	1.80	9.80	10.50	0.55	2.70	3.80	2.85	11.98	15.00	3.63	A
	7	9	12	12	1.76	2.22	2.91	2.91	1.80	9.80	10.50	0.55	2.50	3.80	2.85	11.09	15.00	3.92	A
	7	12	12	12	1.65	2.72	2.72	2.72	1.80	9.80	10.50	0.55	2.50	3.80	2.85	11.09	15.00	3.92	A
	9	9	9	9	2.45	2.45	2.45	2.45	1.80	9.80	10.50	0.55	2.43	3.80	2.85	10.79	15.00	4.03	A
	9	9	9	12	2.27	2.27	2.27	2.98	1.80	9.80	10.50	0.55	2.50	3.80	2.85	11.09	15.00	3.92	A
	9	9	12	12	2.12	2.12	2.78	2.78	1.80	9.80	10.50	0.55	2.50	3.80	2.85	11.09	15.00	3.92	A
	9	9	12	18	1.88	1.88	2.47	3.57	1.80	9.80	10.50	0.55	2.55	3.80	2.85	11.31	15.00	3.84	A
	9	12	12	12	1.99	2.60	2.60	2.60	1.80	9.80	10.50	0.55	2.60	3.80	2.85	11.54	15.00	3.77	A
	12	12	12	12	2.45	2.45	2.45	2.45	1.80	9.80	10.50	0.55	2.60	3.80	2.85	11.54	15.00	3.77	A

5U34HS1ERA combination and the data

COOLING

Comb.	Combinations					Rated capacity Output/kW (Nom. cooling)					total cooling capacity(kW)			total power input (kW)			total current (A)@230V			EER (W/W)	energy label
	Unit A	Unit B	Unit C	Unit D	Unit E	Unit A	Unit B	Unit C	Unit D	Unit E	min. data	rated data	max. data	min. data	rated data	max. Data	min. data	rated data	max. Data	rated capacity	
1x1	7	—	—	—	—	2.0	—	—	—	—	1.00	2.00	2.80	0.50	0.65	1.30	2.20	2.88	5.80	3.08	B
	9	—	—	—	—	2.5	—	—	—	—	1.00	2.50	3.10	0.50	0.80	1.34	2.20	3.55	6.00	3.13	B
	12	—	—	—	—	3.5	—	—	—	—	1.00	3.50	4.10	0.50	1.04	1.50	2.20	4.61	6.70	3.37	A
	18	—	—	—	—	5.0	—	—	—	—	1.50	5.00	5.40	0.50	1.50	1.90	2.20	6.65	8.40	3.33	A
	24	—	—	—	—	6.5	—	—	—	—	1.50	6.50	7.40	0.50	2.00	3.00	2.20	8.87	13.20	3.25	A
BI (1x2)	7	18	—	—	—	2.00	5.00	—	—	—	1.00	7.00	7.50	0.50	2.30	4.00	2.15	10.20	19.00	3.04	B
	7	24	—	—	—	2.00	6.50	—	—	—	1.00	8.50	9.00	0.50	2.80	4.00	2.15	12.42	19.00	3.04	B
	9	18	—	—	—	2.50	5.00	—	—	—	1.00	7.50	8.00	0.50	2.40	4.00	2.15	10.65	19.00	3.13	B
	9	24	—	—	—	2.50	6.50	—	—	—	1.00	9.00	9.50	0.50	2.70	4.00	2.15	11.98	19.00	3.33	A
	12	18	—	—	—	3.50	5.00	—	—	—	1.00	8.50	9.00	0.50	2.70	4.00	2.15	11.98	19.00	3.15	B
	12	24	—	—	—	3.50	6.50	—	—	—	1.00	10.00	10.50	0.50	3.10	4.00	2.15	13.75	19.00	3.23	A
	18	18	—	—	—	5.00	5.00	—	—	—	1.00	10.00	10.50	0.50	3.10	4.00	2.15	13.75	19.00	3.23	A
	18	24	—	—	—	4.35	5.65	—	—	—	1.00	10.00	10.50	0.50	3.10	4.00	2.15	13.75	19.00	3.22	A
	24	24				5.00	5.00				1.00	10.00	10.50	0.50	3.20	4.00	2.15	14.20	19.00	3.13	B
TRI (1x3)	7	7	12	—	—	2.00	2.00	3.50	—	—	1.50	7.50	8.10	0.55	2.74	4.00	2.50	12.16	19.00	2.74	D
	7	7	18	—	—	2.00	2.00	5.00	—	—	1.50	9.00	9.80	0.55	2.74	4.00	2.50	12.16	19.00	3.28	A
	7	7	24	—	—	1.90	1.90	6.19	—	—	1.50	10.00	10.50	0.55	2.74	4.00	2.50	12.16	19.00	3.65	A
	7	9	9	—	—	2.00	2.50	2.50	—	—	1.50	7.00	7.60	0.55	2.74	4.00	2.50	12.16	19.00	2.55	E
	7	9	12	—	—	2.00	2.50	3.50	—	—	1.50	8.00	8.60	0.55	2.74	4.00	2.50	12.16	19.00	2.92	C
	7	9	18	—	—	2.00	2.50	5.00	—	—	1.50	9.50	10.20	0.55	2.74	4.00	2.50	12.16	19.00	3.47	A
	7	9	24	—	—	1.82	2.27	5.91	—	—	1.50	10.00	10.50	0.55	3.04	4.00	2.50	13.49	19.00	3.29	A
	7	12	12	—	—	2.00	3.50	3.50	—	—	1.50	9.00	9.60	0.55	3.04	4.00	2.50	13.49	19.00	2.96	C
	7	12	18	—	—	1.90	3.33	4.76	—	—	1.50	10.00	10.50	0.55	3.04	4.00	2.50	13.49	19.00	3.29	A
	7	12	24	—	—	1.67	2.92	5.42	—	—	1.50	10.00	10.50	0.55	3.04	4.00	2.50	13.49	19.00	3.29	A
	9	9	9	—	—	2.50	2.50	2.50	—	—	1.50	7.50	8.10	0.55	3.04	4.00	2.50	13.49	19.00	2.47	E
	9	9	12	—	—	2.50	2.50	3.50	—	—	1.50	8.50	9.10	0.55	3.04	4.00	2.50	13.49	19.00	2.80	D
	9	9	18	—	—	2.50	2.50	5.00	—	—	1.50	10.00	10.50	0.55	3.04	4.00	2.50	13.49	19.00	3.29	A
	9	9	24	—	—	2.17	2.17	5.65	—	—	1.50	10.00	10.50	0.55	3.04	4.00	2.50	13.49	19.00	3.29	A
	9	12	12	—	—	2.50	3.50	3.50	—	—	1.50	9.50	10.20	0.55	3.04	4.00	2.50	13.49	19.00	3.13	B
	9	12	18	—	—	2.27	3.18	4.55	—	—	1.50	10.00	10.50	0.55	3.04	4.00	2.50	13.49	19.00	3.29	A
	9	12	24	—	—	2.00	2.80	5.20	—	—	1.50	10.00	10.50	0.55	3.04	4.00	2.50	13.49	19.00	3.29	A
	12	12	12	—	—	3.33	3.33	3.33	—	—	1.50	10.00	10.50	0.55	3.04	4.00	2.50	13.49	19.00	3.29	A
	12	12	18	—	—	2.92	2.92	4.17	—	—	1.50	10.00	10.50	0.55	2.99	4.00	2.50	13.27	19.00	3.34	A
	12	12	24			2.59	2.59	4.81			1.50	10.00	11.00	0.55	3.27	4.00	2.50	14.51	19.00	3.06	B
	12	18	18			2.59	3.70	3.70			1.50	10.00	11.00	0.55	3.27	4.00	2.50	14.51	19.00	3.06	B
	18	18	18			3.33	3.33	3.33			1.80	10.00	11.00	0.55	3.32	4.00	2.50	14.73	19.00	3.01	B
QUADRI (1x4)	7	7	7	7	—	2.00	2.00	2.00	2.00	—	1.80	8.00	8.80	0.55	2.89	4.00	2.50	12.82	19.00	2.77	D
	7	7	7	9	—	2.00	2.00	2.00	2.50	—	1.80	8.50	9.30	0.55	2.89	4.00	2.50	12.82	19.00	2.94	C
	7	7	7	12	—	2.00	2.00	2.00	3.50	—	1.80	9.50	10.30	0.55	2.96	4.00	2.50	13.13	19.00	3.21	A
	7	7	7	18	—	1.82	1.82	1.82	4.55	—	1.80	10.00	11.00	0.55	2.99	4.00	2.50	13.27	19.00	3.34	A
	7	7	7	24	—	1.60	1.60	1.60	5.20	—	1.80	10.00	11.00	0.55	2.99	4.00	2.50	13.27	19.00	3.34	A
	7	7	9	9	—	2.00	2.00	2.50	2.50	—	1.80	9.00	9.80	0.55	2.96	4.00	2.50	13.13	19.00	3.04	B
	7	7	9	12	—	2.00	2.00	2.50	3.50	—	1.80	10.00	10.50	0.55	2.96	4.00	2.50	13.13	19.00	3.38	A
	7	7	9	18	—	1.74	1.74	2.17	4.35	—	1.80	10.00	11.00	0.55	2.99	4.00	2.50	13.27	19.00	3.34	A
	7	7	9	24	—	1.54	1.54	1.92	5.00	—	1.80	10.00	11.00	0.55	2.99	4.00	2.50	13.27	19.00	3.34	A
	7	7	12	12	—	1.82	1.82	3.18	3.18	—	1.80	10.00	10.80	0.55	2.96	4.00	2.50	13.13	19.00	3.38	A
	7	7	12	18	—	1.60	1.60	2.80	4.00	—	1.80	10.00	11.00	0.55	2.99	4.00	2.50	13.27	19.00	3.34	A
	7	9	9	9	—	2.00	2.50	2.50	2.50	—	1.80	9.50	10.30	0.55	2.96	4.00	2.50	13.13	19.00	3.21	A
	7	9	9	12	—	1.90	2.38	2.38	3.33	—	1.80	10.00	10.80	0.55	2.99	4.00	2.50	13.27	19.00	3.34	A
	7	9	9	18	—	1.67	2.08	2.08	4.17	—	1.80	10.00	11.00	0.55	2.99	4.00	2.50	13.27	19.00	3.34	A

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	7	9	12	12	—	1.74	2.17	3.04	3.04	—	1.80	10.00	10.80	0.55	2.96	4.00	2.50	13.13	19.00	3.38	A
	7	12	12	12	—	1.60	2.80	2.80	2.80	—	1.80	10.00	11.00	0.55	2.96	4.00	2.50	13.13	19.00	3.38	A
	9	9	9	9	—	2.50	2.50	2.50	2.50	—	1.80	10.00	11.00	0.55	3.01	4.00	2.50	13.35	19.00	3.32	A
	9	9	9	12	—	2.27	2.27	2.27	3.18	—	1.80	10.00	11.00	0.55	2.96	4.00	2.50	13.13	19.00	3.38	A
	9	9	9	18	—	2.00	2.00	2.00	4.00	—	1.80	10.00	11.00	0.55	2.94	4.00	2.50	13.04	19.00	3.40	A
	9	9	12	12	—	2.08	2.08	2.92	2.92	—	1.80	10.00	11.00	0.55	2.96	4.00	2.50	13.13	19.00	3.38	A
	9	12	12	12	—	1.92	2.69	2.69	2.69	—	1.80	10.00	11.00	0.55	2.96	4.00	2.50	13.13	19.00	3.38	A
	12	12	12	12		2.50	2.50	2.50	2.50		1.80	10.00	11.00	0.55	2.97	4.00	2.50	13.18	19.00	3.37	A
QUIN (1×5)	7	7	7	7	7	2.00	2.00	2.00	2.00	2.00	2.00	10.00	11.00	0.55	3.01	4.00	2.50	13.35	19.00	3.32	A
	7	7	7	7	9	1.90	1.90	1.90	1.90	2.38	2.00	10.00	11.00	0.55	2.99	4.00	2.50	13.27	19.00	3.34	A
	7	7	7	7	12	1.74	1.74	1.74	1.74	3.04	2.00	10.00	11.00	0.55	2.97	4.00	2.50	13.18	19.00	3.37	A
	7	7	7	9	9	1.82	1.82	1.82	2.27	2.27	2.00	10.00	11.00	0.55	2.96	4.00	2.50	13.13	19.00	3.38	A
	7	7	7	9	12	1.67	1.67	1.67	2.08	2.92	2.00	10.00	11.00	0.55	2.97	4.00	2.50	13.18	19.00	3.37	A
	7	7	7	12	12	1.54	1.54	1.54	2.69	2.69	2.00	10.00	11.00	0.55	3.01	4.00	2.50	13.35	19.00	3.32	A
	7	7	9	9	9	1.74	1.74	2.17	2.17	2.17	2.00	10.00	11.00	0.55	3.06	4.00	2.50	13.58	19.00	3.27	A
	7	7	9	9	12	1.60	1.60	2.00	2.00	2.80	2.00	10.00	11.00	0.55	3.06	4.00	2.50	13.58	19.00	3.27	A
	7	9	9	9	9	1.67	2.08	2.08	2.08	2.08	2.00	10.00	11.00	0.55	3.09	4.00	2.50	13.71	19.00	3.24	A
	9	9	9	9	9	2.00	2.00	2.00	2.00	2.00	2.00	10.00	11.00	0.55	3.06	4.00	2.50	13.58	19.00	3.27	A
	9	9	9	9	12	1.85	1.85	1.85	1.85	2.59	2.00	10.00	11.00	0.55	3.12	4.00	2.50	13.84	19.00	3.20	A
	9	9	9	12	12	1.72	1.72	1.72	2.41	2.41	2.00	10.00	11.00	0.55	3.12	4.00	2.50	13.84	19.00	3.20	A

HEATING

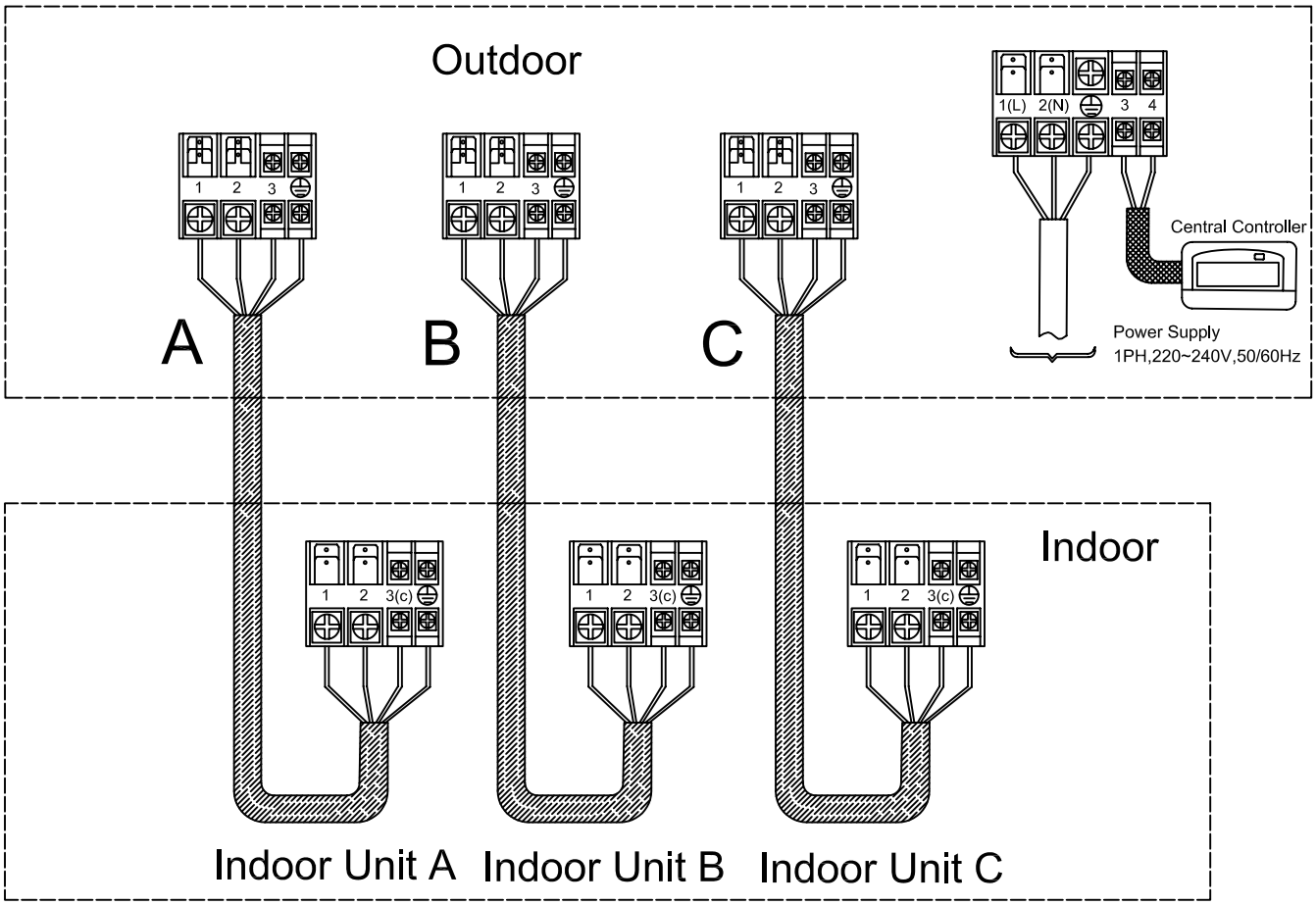
Comb.	Combinations					Rated capacity Output/kW (Nom. heating)					total heating capacity(KW)			total power input (W)			total current (A)@230V			EER (W/W)	energy label
	Unit A	Unit B	Unit C	Unit D	Unit E	Unit A	Unit B	Unit C	Unit D	Unit E	min. data	rated data	max. data	min. data	rated data	max. Data	min. data	rated data	max. Data	rated capacity	
1x1	7	—	—	—	—	2.3	—	—	—	—	1.00	2.30	4.00	0.50	0.66	1.50	2.22	2.93	5.80	3.48	A
	9	—	—	—	—	2.9	—	—	—	—	1.00	2.90	4.10	0.50	0.86	1.40	2.22	3.82	6.00	3.37	A
	12	—	—	—	—	3.8	—	—	—	—	1.00	3.80	4.10	0.50	1.16	1.50	2.22	5.15	6.70	3.28	A
	18	—	—	—	—	5.5	—	—	—	—	1.50	5.50	6.00	0.55	1.66	2.60	2.44	7.36	8.40	3.31	A
	24	—	—	—	—	7.0	—	—	—	—	1.50	7.00	8.60	0.55	2.06	2.60	2.44	9.14	8.90	3.40	A
BI (1x2)	7	18	—	—	—	2.30	5.50	—	—	—	1.20	7.80	7.80	0.50	2.20	4.00	2.15	9.76	19.00	3.55	B
	7	24	—	—	—	2.30	7.00	—	—	—	1.20	9.30	9.30	0.50	2.80	4.00	2.15	12.42	19.00	3.32	C
	9	18	—	—	—	2.90	5.50	—	—	—	1.20	8.40	8.40	0.50	2.40	4.00	2.15	10.65	19.00	3.50	B
	9	24	—	—	—	2.90	7.00	—	—	—	1.20	9.90	9.90	0.50	2.70	4.00	2.15	11.98	19.00	3.67	A
	12	18	—	—	—	4.37	6.33	—	—	—	1.20	10.70	9.30	0.50	2.90	4.00	2.15	12.87	19.00	3.69	A
	12	24	—	—	—	3.76	6.94	—	—	—	1.20	10.70	10.80	0.50	2.90	4.00	2.15	12.87	19.00	3.69	A
	18	18	—	—	—	5.35	5.35	—	—	—	1.20	10.70	11.00	0.50	2.90	4.00	2.15	12.87	19.00	3.69	A
	18	24	—	—	—	4.71	5.99	—	—	—	1.20	10.70	11.50	0.50	2.90	4.00	2.15	12.87	19.00	3.69	A
	24	24				5.35	5.35				1.20	10.70	11.50	0.50	3.00	4.00	2.44	13.31	19.00	3.57	B
TRI (1x3)	7	7	12	—	—	2.30	2.30	3.80	—	—	1.50	8.40	8.40	0.55	2.51	4.00	2.50	11.14	19.00	3.35	C
	7	7	18	—	—	2.30	2.30	5.50	—	—	1.50	10.10	10.10	0.55	2.76	4.00	2.50	12.24	19.00	3.66	A
	7	7	24	—	—	2.12	2.12	6.46	—	—	1.50	10.70	11.50	0.55	2.96	4.00	2.50	13.13	19.00	3.61	A
	7	9	9	—	—	2.30	2.90	2.90	—	—	1.50	8.10	8.10	0.55	2.51	4.00	2.50	11.14	19.00	3.23	C
	7	9	12	—	—	2.30	2.90	3.80	—	—	1.50	9.00	9.00	0.55	2.51	4.00	2.50	11.14	19.00	3.59	B
	7	9	18	—	—	2.30	2.90	5.50	—	—	1.50	10.70	10.70	0.55	2.96	4.00	2.50	13.13	19.00	3.61	A
	7	9	24	—	—	2.02	2.54	6.14	—	—	1.50	10.70	11.50	0.55	3.01	4.00	2.50	13.35	19.00	3.55	B
	7	12	12	—	—	2.30	3.80	3.80	—	—	1.50	9.90	9.90	0.55	2.71	4.00	2.50	12.02	19.00	3.65	A
	7	12	18	—	—	2.12	3.51	5.07	—	—	1.50	10.70	11.50	0.55	3.11	4.00	2.50	13.80	19.00	3.44	B
	7	12	24	—	—	1.88	3.10	5.72	—	—	1.50	10.70	11.50	0.55	3.01	4.00	2.50	13.35	19.00	3.55	B
	9	9	9	—	—	2.90	2.90	2.90	—	—	1.50	8.70	8.70	0.55	2.56	4.00	2.50	11.36	19.00	3.40	C
	9	9	12	—	—	2.90	2.90	3.80	—	—	1.50	9.60	9.60	0.55	2.61	4.00	2.50	11.58	19.00	3.68	A
	9	9	18	—	—	2.75	2.75	5.21	—	—	1.50	10.70	11.00	0.55	3.01	4.00	2.50	13.35	19.00	3.55	B
	9	9	24	—	—	2.42	2.42	5.85	—	—	1.50	10.70	11.50	0.55	3.01	4.00	2.50	13.35	19.00	3.55	B
	9	12	12	—	—	2.90	3.80	3.80	—	—	1.50	10.50	10.50	0.55	3.01	4.00	2.50	13.35	19.00	3.49	B
	9	12	18	—	—	2.54	3.33	4.82	—	—	1.50	10.70	11.50	0.55	3.01	4.00	2.50	13.35	19.00	3.55	B

5U34HS1ERA combination and the data

	9	12	24	—	—	2.26	2.97	5.47	—	—	1.50	10.70	11.50	0.55	3.01	4.00	2.50	13.35	19.00	3.55	B
	12	12	12	—	—	3.57	3.57	3.57	—	—	1.50	10.70	11.50	0.55	3.01	4.00	2.50	13.35	19.00	3.55	B
	12	12	18	—	—	3.10	3.10	4.49	—	—	1.50	10.70	11.50	0.55	3.01	4.00	2.50	13.35	19.00	3.55	B
	12	12	24			2.78	2.78	5.13			1.80	10.70	11.50	0.55	3.10	4.00	2.50	13.75	19.00	3.45	B
	12	18	18			2.75	3.98	3.98			1.80	10.70	11.50	0.55	3.10	4.00	2.50	13.75	19.00	3.45	B
	18	18	18			3.57	3.57	3.57			1.80	10.70	11.50	0.55	3.15	4.00	2.50	13.98	19.00	3.40	C
QUADRI (1x4)	7	7	7	7	—	2.30	2.30	2.30	2.30	—	1.80	9.20	9.20	0.55	2.87	4.00	2.50	12.73	19.00	3.21	C
	7	7	7	9	—	2.30	2.30	2.30	2.90	—	1.80	9.80	9.80	0.55	2.87	4.00	2.50	12.73	19.00	3.41	B
	7	7	7	12	—	2.30	2.30	2.30	3.80	—	1.80	10.70	10.70	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	7	7	7	18	—	1.98	1.98	1.98	4.75	—	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	7	7	7	24	—	1.77	1.77	1.77	5.39	—	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	7	7	9	9	—	2.30	2.30	2.90	2.90	—	1.80	10.40	10.40	0.55	2.87	4.00	2.50	12.73	19.00	3.62	A
	7	7	9	12	—	2.18	2.18	2.75	3.60	—	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	7	7	9	18	—	1.89	1.89	2.39	4.53	—	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	7	7	9	24	—	1.70	1.70	2.14	5.17	—	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	7	7	12	12	—	2.02	2.02	3.33	3.33	—	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	7	7	12	18	—	1.77	1.77	2.93	4.23	—	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	7	9	9	9	—	2.24	2.82	2.82	2.82	—	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	7	9	9	12	—	2.07	2.61	2.61	3.42	—	1.80	10.70	11.50	0.55	2.90	4.00	2.50	12.87	19.00	3.69	A
	7	9	9	18	—	1.81	2.28	2.28	4.33	—	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	7	9	12	12	—	1.92	2.42	3.18	3.18	—	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	7	12	12	12	—	1.80	2.97	2.97	2.97	—	1.80	10.70	11.50	0.55	2.88	4.00	2.50	12.78	19.00	3.71	A
	9	9	9	9	—	2.68	2.68	2.68	2.68	—	1.80	10.70	11.50	0.55	2.92	4.00	2.50	12.95	19.00	3.66	A
	9	9	9	12	—	2.48	2.48	2.48	3.25	—	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	9	9	9	18	—	2.19	2.19	2.19	4.14	—	1.80	10.70	11.50	0.55	2.85	4.00	2.50	12.64	19.00	3.75	A
	9	9	12	12	—	2.32	2.32	3.03	3.03	—	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	9	12	12	12	—	2.17	2.84	2.84	2.84	—	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	12	12	12	12		2.68	2.68	2.68	2.68		1.80	10.70	11.50	0.55	2.91	4.00	2.50	12.91	19.00	3.68	A
QUIN (1×5)	7	7	7	7	7	2.14	2.14	2.14	2.14	2.14	1.80	10.70	11.50	0.55	2.92	4.00	2.50	12.95	19.00	3.66	A
	7	7	7	7	9	2.03	2.03	2.03	2.03	2.56	1.80	10.70	11.50	0.55	2.91	4.00	2.50	12.91	19.00	3.68	A
	7	7	7	7	12	1.89	1.89	1.89	1.89	3.13	1.80	10.70	11.50	0.55	2.90	4.00	2.50	12.87	19.00	3.69	A
	7	7	7	9	9	1.94	1.94	1.94	2.44	2.44	1.80	10.70	11.50	0.55	2.90	4.00	2.50	12.87	19.00	3.69	A
	7	7	7	9	12	1.81	1.81	1.81	2.28	2.99	1.80	10.70	11.50	0.55	2.89	4.00	2.50	12.82	19.00	3.70	A
	7	7	7	12	12	1.70	1.70	1.70	2.80	2.80	1.80	10.70	11.50	0.55	2.90	4.00	2.50	12.87	19.00	3.69	A
	7	7	9	9	9	1.85	1.85	2.33	2.33	2.33	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	7	7	9	9	12	1.73	1.73	2.19	2.19	2.86	1.80	10.70	11.50	0.55	2.91	4.00	2.50	12.91	19.00	3.68	A
	7	9	9	9	9	1.77	2.23	2.23	2.23	2.23	1.80	10.70	11.50	0.55	2.92	4.00	2.50	12.95	19.00	3.66	A
	9	9	9	9	9	2.14	2.14	2.14	2.14	2.14	1.80	10.70	11.50	0.55	2.87	4.00	2.50	12.73	19.00	3.73	A
	9	9	9	9	12	2.01	2.01	2.01	2.01	2.64	1.80	10.70	11.50	0.55	2.92	4.00	2.50	12.95	19.00	3.66	A
	9	9	9	12	12	1.90	1.90	1.90	2.49	2.49	1.80	10.70	11.50	0.55	3.26	4.00	2.50	14.46	19.00	3.28	C

4.2. Wiring connection

3U19FS1ERA



Power Supply Cable:
H05RN-F3G 4.0mm2

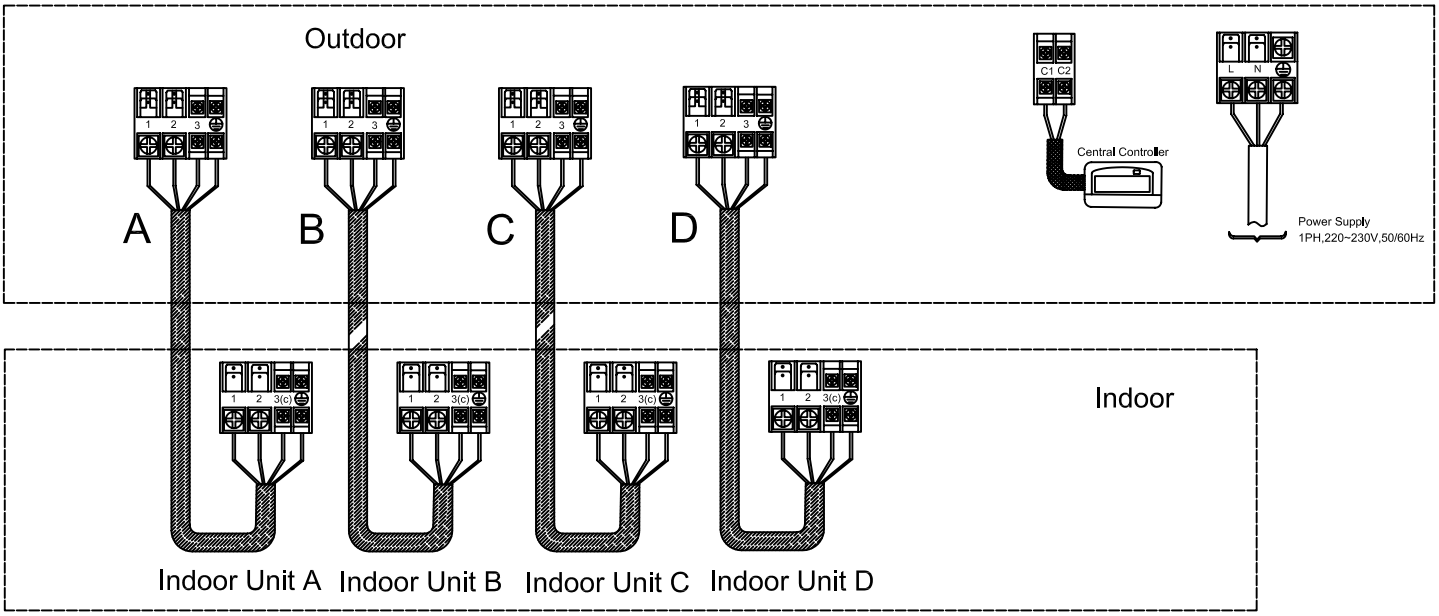
Connecting Cable:
H05RN-F4G 2.5mm2

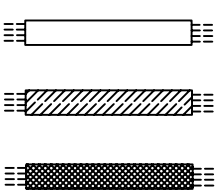
Connecting Cable:
H05RN-F2G 2.5mm2

If this outdoor unit connects with AS*S1ERA, the connecting cable is 1.5mm2

Connect the connecting wires between indoor and outdoor units and ensure the sequence numbers on terminals match with each other.

4U25-30HS1ERA

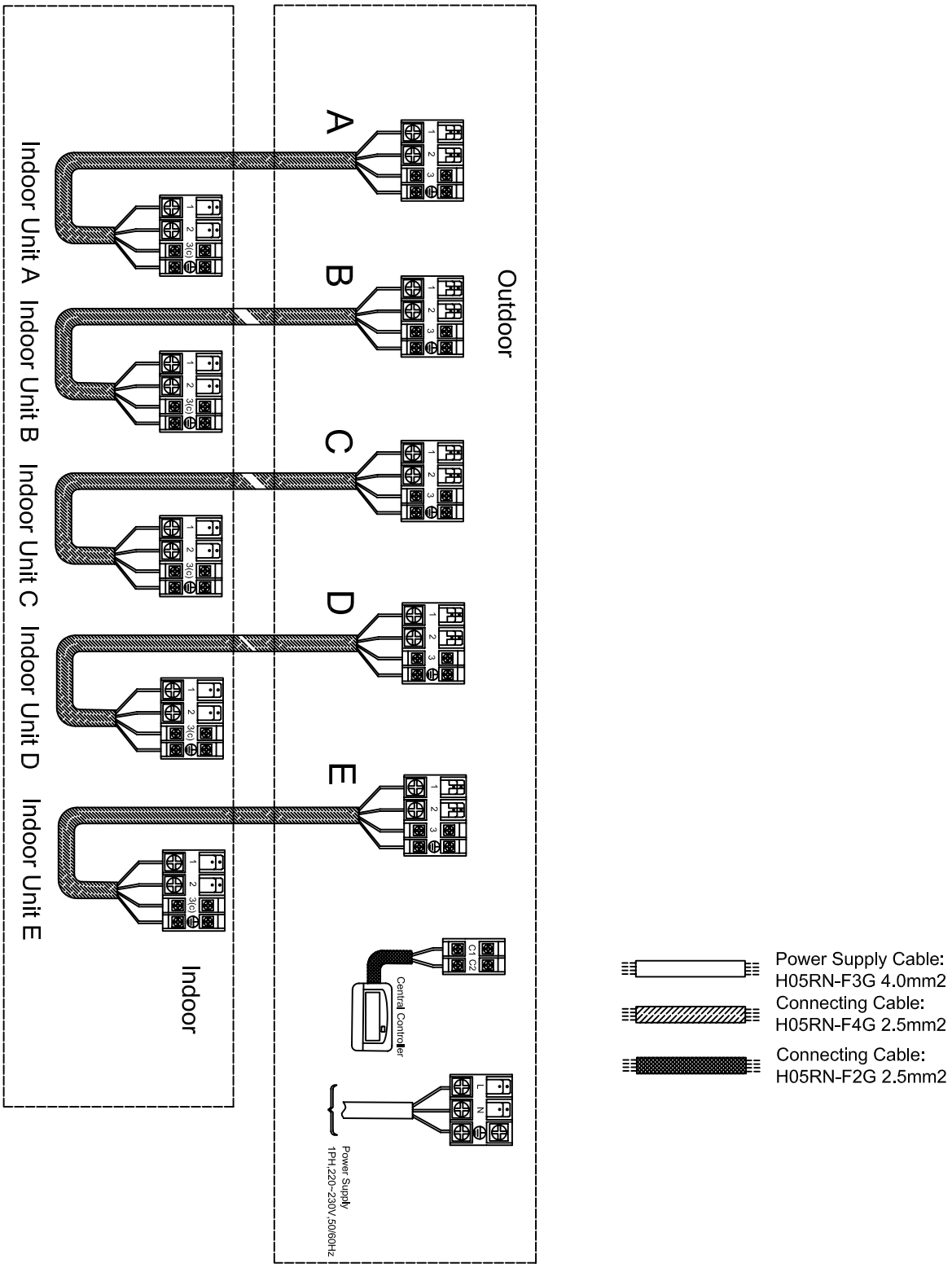




If this outdoor unit connects with AS*S1ERA, the connecting cable is 1.5mm2

Connect the connecting wires between indoor and outdoor units and ensure the sequence numbers on terminals match with each other.

5U34HS1ERA:

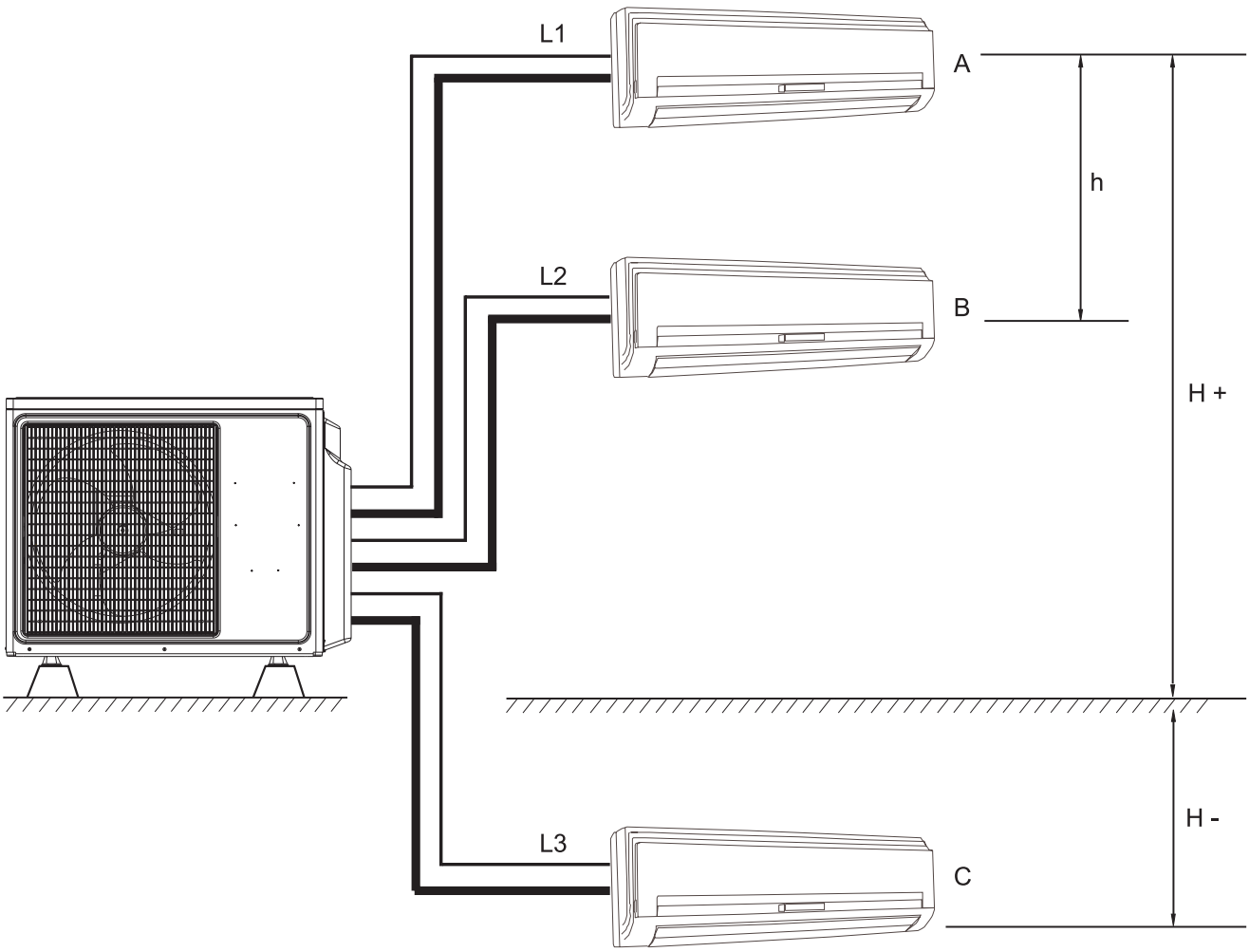


If this outdoor unit connects with AS*S1ERA, the connecting cable is 1.5mm2

Connect the connecting wires between indoor and outdoor units and ensure the sequence numbers on terminals match with each other.

4.3 Limitation values on pipe installation

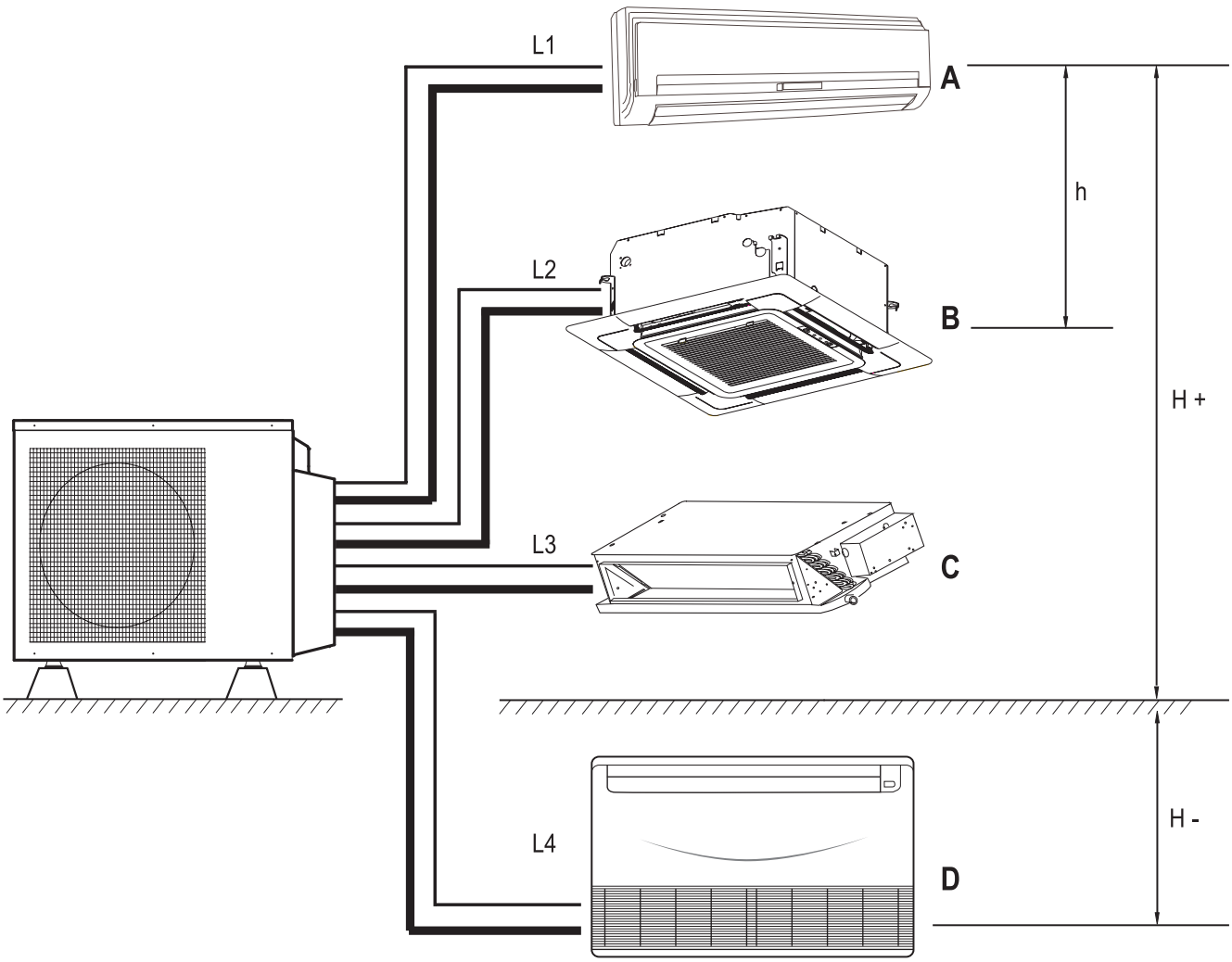
3U19FS1ERA



The piping length information, please refer the following table.

Item	Unit	Description	Standard	Maximum
A,B,C liquid pipe	mm	Size of the liquid side connection pipe	φ6.35	/
A,B,C Gas pipe	mm	Size of the gas side connection pipe	φ9.52	/
L1 (one way)	m	Max.piping length between IU and OU of the way	≤10	≤25
L2 (one way)	m	Max.piping length between IU and OU of the way	≤10	≤25
L3 (one way)	m	Max.piping length between IU and OU of the way	≤10	≤25
L1+L2+L3	m	Total liquid piping length	≤30	≤50
h	m	Drop between every two indoor units when the location of the outdoor unit is among indoor units	≤1	≤15
	m	Drop between every two indoor units when the location of the outdoor unit is at one side of indoor units	≤1	≤7.5
H+	m	Drop between the outdoor unit and the indoor unit	≤5	≤15
H-	m	Drop between the outdoor unit and the indoor unit when the location of outdoor unit is among the indoor units	≤5	≤7.5
	m	Drop between the outdoor unit and the indoor unit when the location of outdoor unit is at one side of indoor units	≤5	≤15

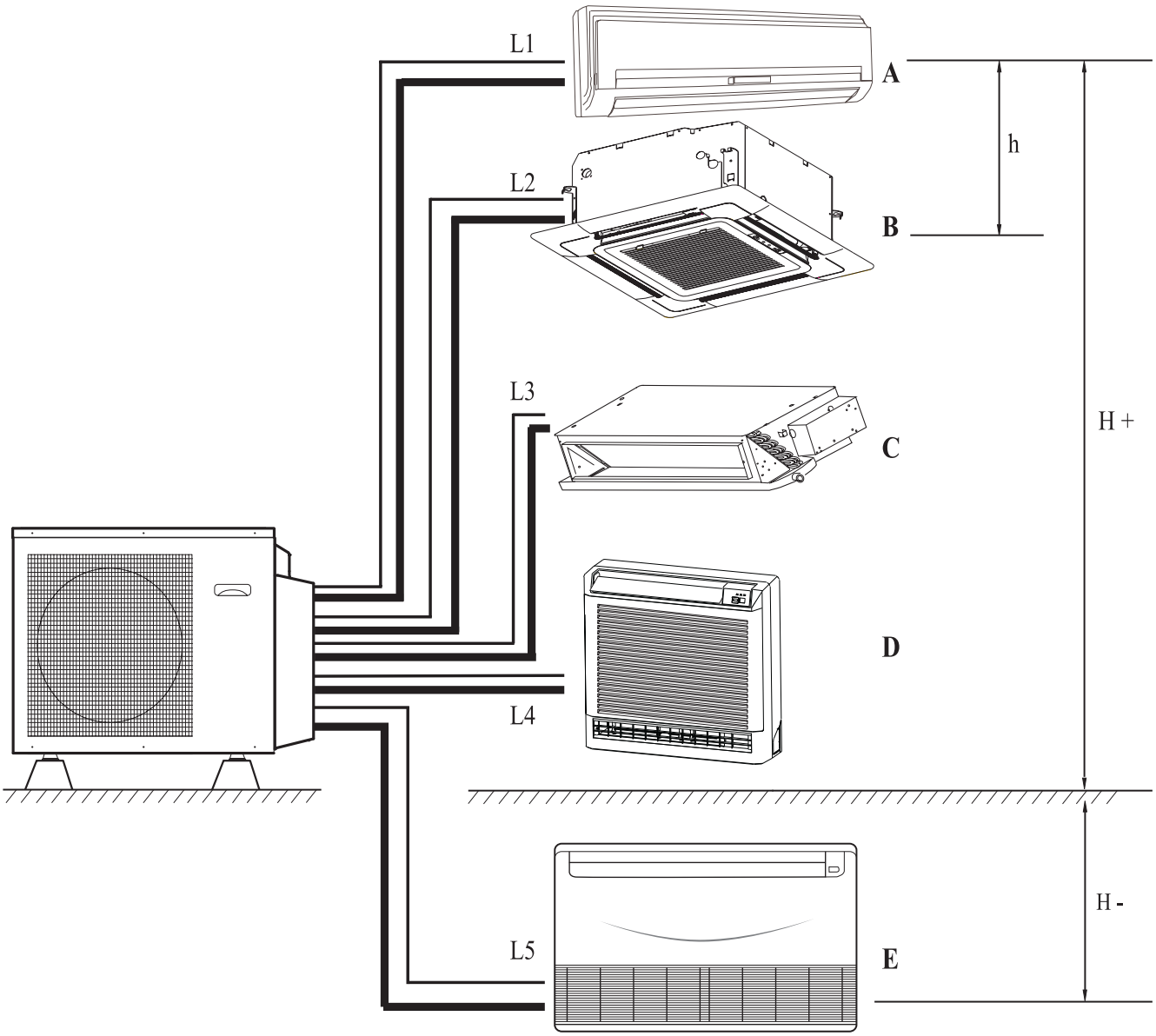
4U25-30HS1ERA



The piping length information, please refer the following table.

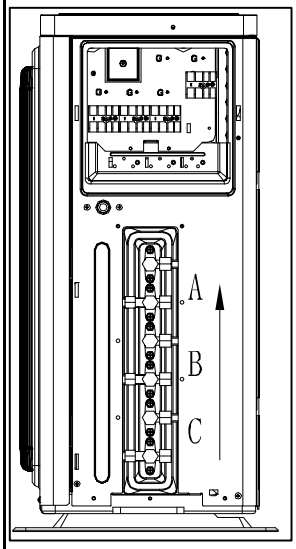
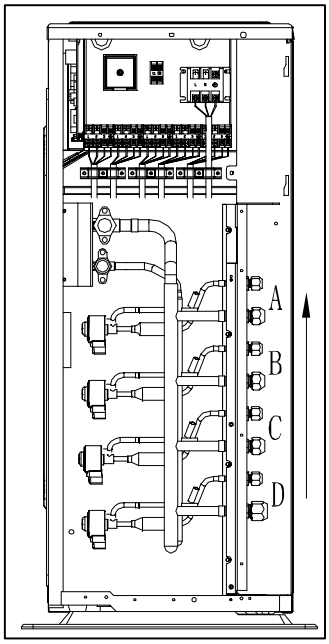
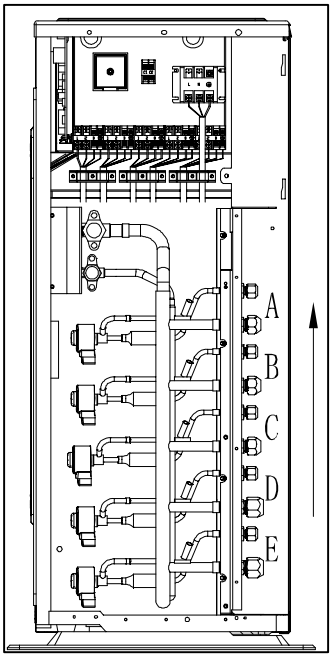
Item	Unit	Description	Standard	Maximum
A,B,C, Dliquid pipe	mm	Size of the liquid side connection pipe	φ6.35	/
A,B,C Gas pipe	mm	Size of the gas side connection pipe	φ9.52	/
D Gas pi[pe	mm	Size of the gas side connection pipe	φ12.7	/
L1 (one way)	m	Max.piping length between IU and OU of the way	≤10	≤25
L2 (one way)	m	Max.piping length between IU and OU of the way	≤10	≤25
L3 (one way)	m	Max.piping length between IU and OU of the way	≤10	≤25
L4 (one way)	m	Max.piping length between IU and OU of the way	≤10	≤25
L1+L2+L3+L4	m	Total liquid piping length	≤40	≤70
h	m	Drop between every two indoor units when the location of the outdoor unit is among indoor units	≤1	≤15
	m	Drop between every two indoor units when the location of the outdoor unit is at one side of indoor units	≤1	≤7.5
H+	m	Drop between the outdoor unit and the indoor unit	≤5	≤15
H-	m	Drop between the outdoor unit and the indoor unit when the location of outdoor unit is among the indoor units	≤5	≤7.5
	m	Drop between the outdoor unit and the indoor unit when the location of outdoor unit is at one side of indoor units	≤5	≤15

5U34HS1ERA:



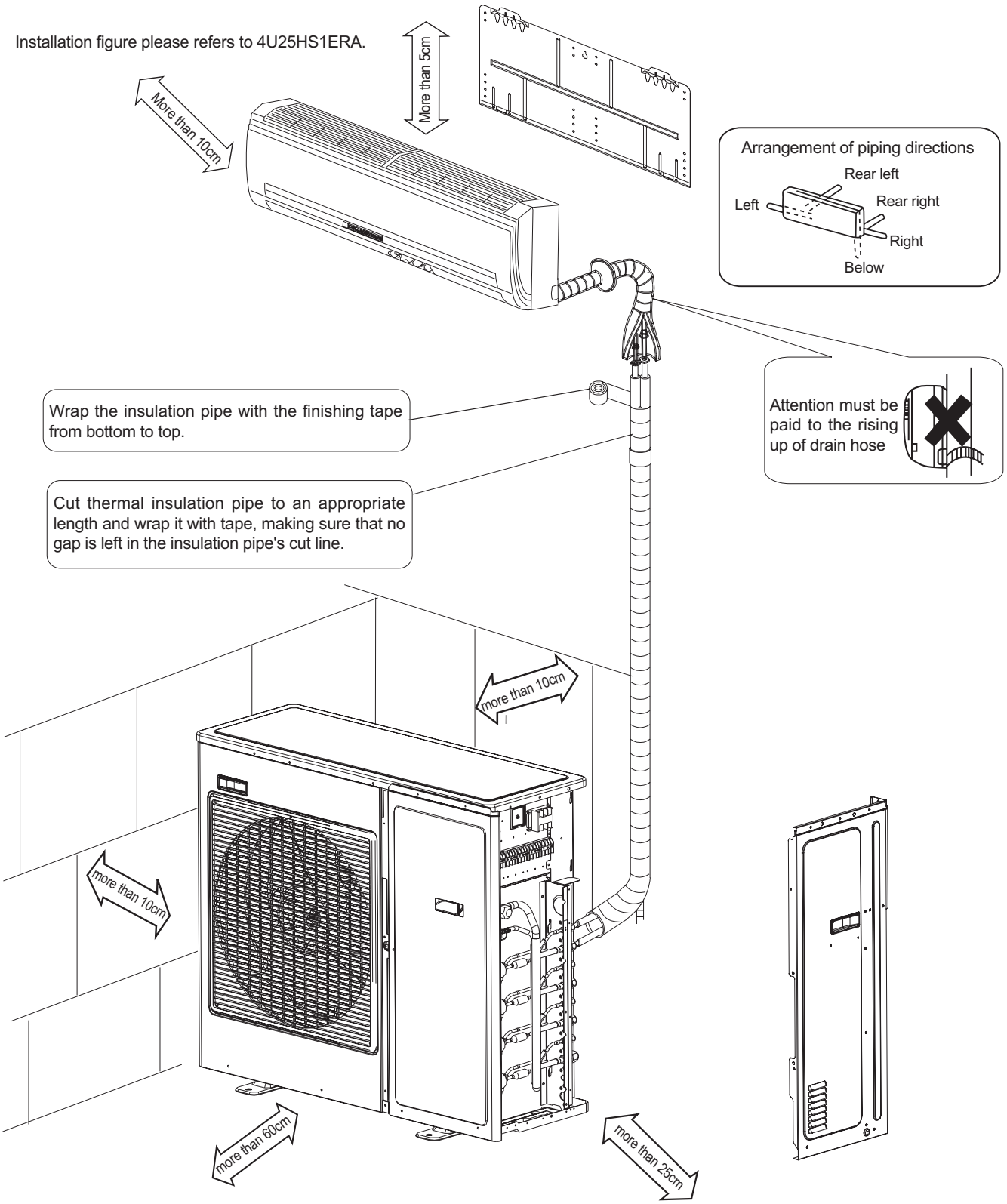
The piping length information, please refer the following table.

Item	Unit	Description	Standard	Maximum
A,B,C,D,E liquid pipe	mm	Size of the liquid side connection pipe	φ6.35	/
A,B,C,D Gas pipe	mm	Size of the gas side connection pipe	φ9.52	/
E Gas pi[pe	mm	Size of the gas side connection pipe	φ12.7	/
L1 (one way)	m	Max.piping length between IU and OU of the way	≤10	≤25
L2 (one way)	m	Max.piping length between IU and OU of the way	≤10	≤25
L3 (one way)	m	Max.piping length between IU and OU of the way	≤10	≤25
L4 (one way)	m	Max.piping length between IU and OU of the way	≤10	≤25
L5 (one way)	m	Max.piping length between IU and OU of the way	≤10	≤25
L1+L2+L3+L4+L5	m	Total liquid piping length	≤40	≤80
h	m	Drop between every two indoor units when the location of the outdoor unit is among indoor units	≤1	≤15
	m	Drop between every two indoor units when the location of the outdoor unit is at one side of indoor units	≤1	≤7.5
H+	m	Drop between the outdoor unit and the indoor unit	≤5	≤15
H-	m	Drop between the outdoor unit and the indoor unit when the location of outdoor unit is among the indoor units	≤5	≤7.5
	m	Drop between the outdoor unit and the indoor unit when the location of outdoor unit is at one side of indoor units	≤5	≤15

Connection cautions			
model	3U19FS1ERA	4U25HS1ERA,4U30HS1ERA	5U34HS1ERA
connection priority between indoor and stop valve higher from down to up			
when there is 1 indoor,the prior stop valve is	C	D	E
when there are 2 indoors,the prior stop valves are	C、B	D、C	E、D
when there are 3 indoors,the prior stop valves are	C、B、A	D、C、B	E、D、C
when there are 4 indoors,the prior stop valves are		D、C、B、A	E、D、C、B
when there are 5 indoors,the prior stop valves are			E、D、C、B、A
Note: For better oil return and more reliable system, please execute as the above when connecting indoor unit.			

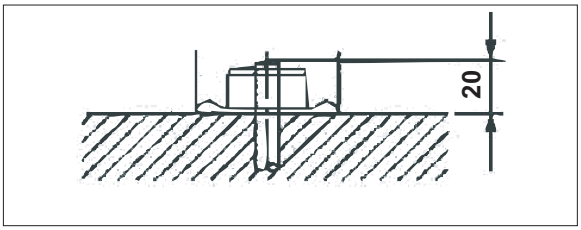
4.4 Outdoor installation

Installation figure please refers to 4U25HS1ERA.



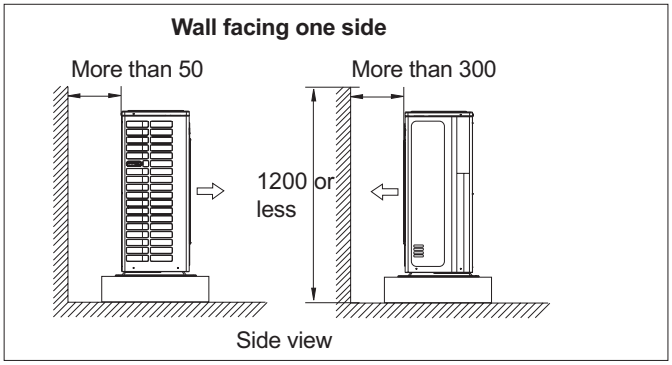
If there is the danger of the unit falling or overturning, fix the unit with foundation bolts, or with wire or other means.
If the location does not have good drainage, place the unit on a level mounting base(or a plastic pedestal).
Install the outdoor unit in a level position. Failure to do so may result in water leakage or accumulation.

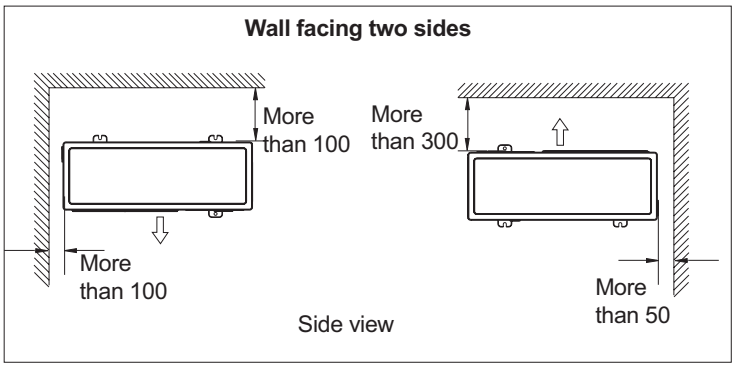
- Check the strength and level of the installation ground so that the unit will not cause any operating vibration or noise after installed.
- In accordance with the foundation drawing in fix the unit securely by means of the foundation bolts.(Prepare four sets of M8 or M10 foundation bolts, nuts and washers each which are available on the market.)
- It is best to screw in the foundation bolts until their length are 20mm from the foundation surface.

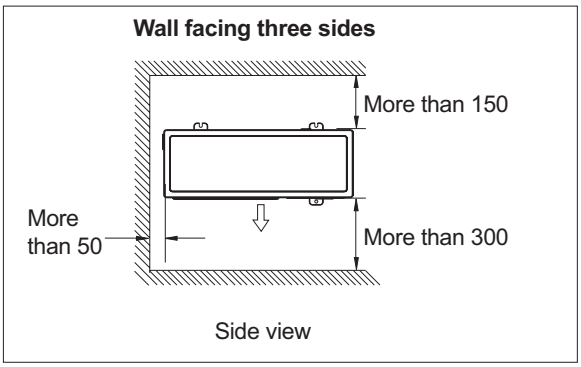


Outdoor Unit Installation Guideline

- Where a wall or other obstacle is in the path of outdoor unit's intake or exhaust airflow, follow the installation guidelines below.
- For any of the below installation pattems, the wall height on the exhaust side should be 1200mm or less.







Limitations on the installation

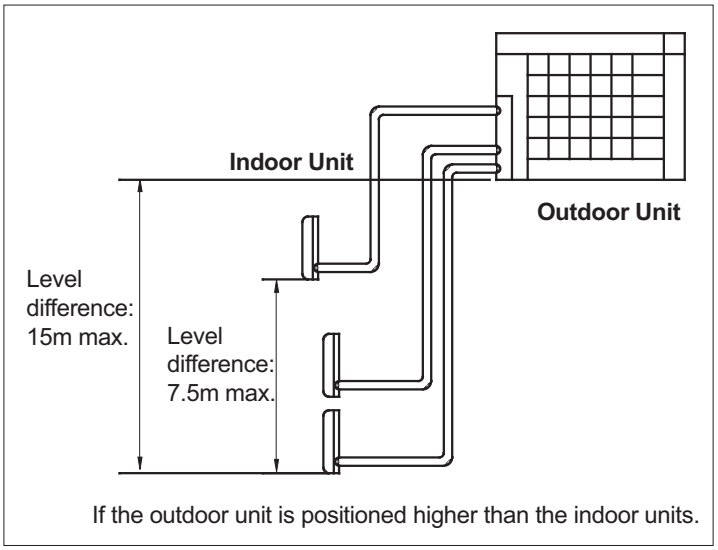
1.Precautions on installation

- Check the strength and level of the installation ground so that unit will not cause any operating vibration or noise after installation.
- In accordance with the foundation drawing in fix the unit securely by means of the foundation bolts.
- It is best to screw in the foundation bolts unit their length are 20 mm from the foundation surface.

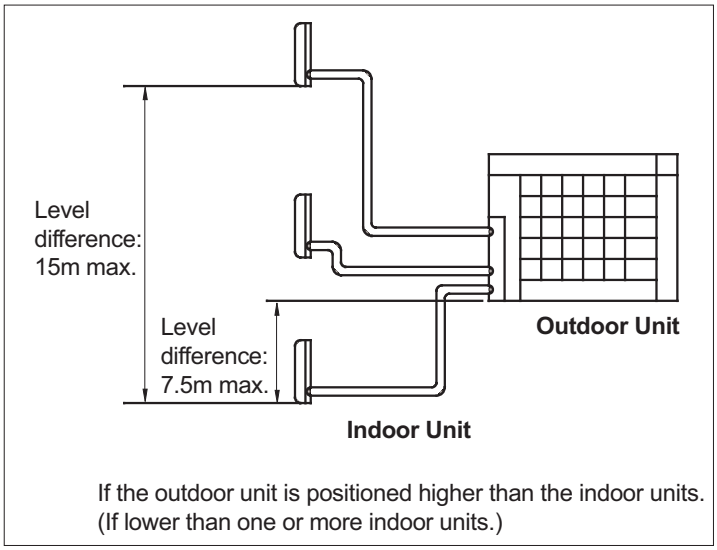
2.Selecting a location for installation of the indoor units

- The maxinum allowable length of refrigerant piping, and the maxmum allowable height difference between the outdoor and indoor units, are listed below. (The shorter the refrigerant piping, the better the performance. Connect so that the piping is as short as possible. Shortest allowable length per room is 3m)

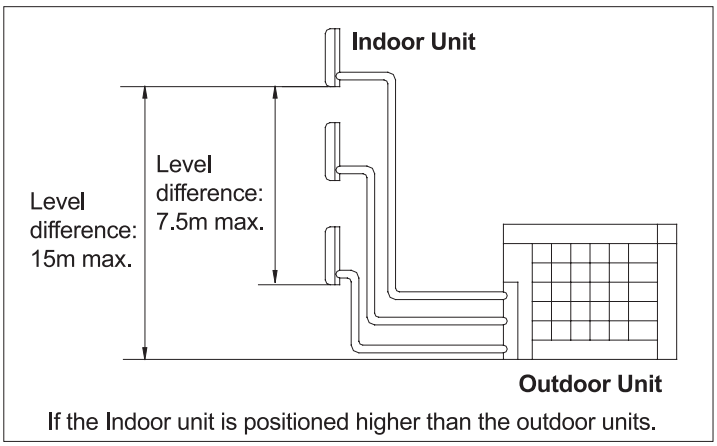
Outdoor unit capacity class	3U19FS1ERA	4U25HS1ERA 4U30HS1ERA	5U34HS1ERA
Piping to each indoor unit	25m max.	25m max.	25m max.
Total length of piping between al lunits	50m max.	70m max.	80m max.



If the outdoor unit is positioned higher than the indoor units.



If the outdoor unit is positioned higher than the indoor units.
(If lower than one or more indoor units.)



If the Indoor unit is positioned higher than the outdoor units.

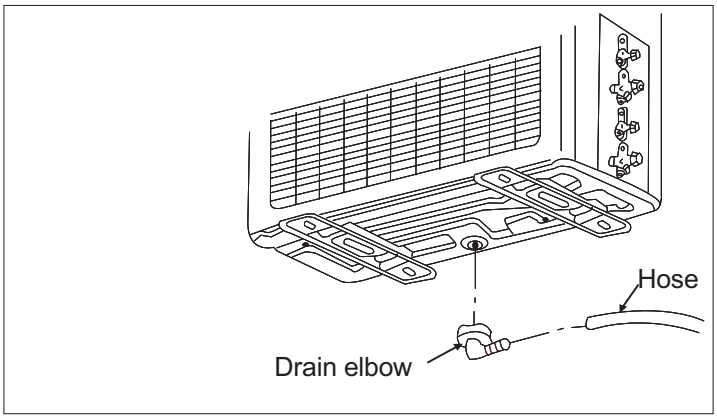
Refrigerant piping work

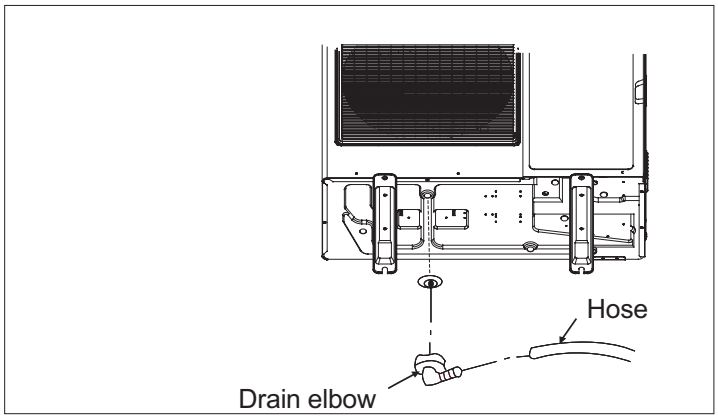
1. Installing outdoor unit

1) When installing the outdoor unit, refer to "Precautions for Selecting the Location" and the "Indoor/Outdoor Unit Installation Drawings".
2)If drain work is necessary, follow the procedures below.

2. Drain work

1) Use drain plug for drainage.
2) If the drain port is covered by a mounting base or floor surface, place additional foot bases of at least 30mm in height under the outdoor unit's feet.
3) In cold areas, do not use a drain hose with the outdoor unit.(Otherwise, drain water may freeze, impairing heating performance.)

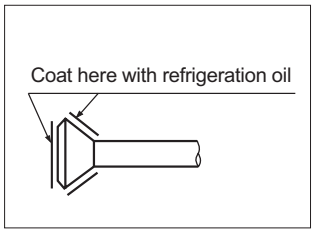


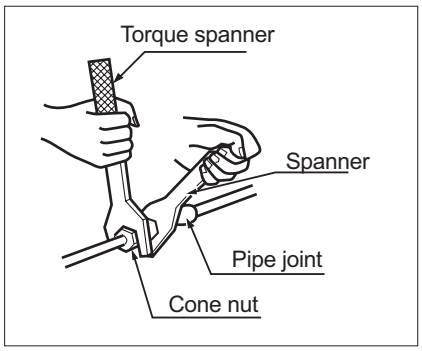


3. Refrigerant piping work

1）. Align the centres of both flares and tighten the flare nuts 3 or 4 turns by hand. Then tighten them fully with the tor wrenches. Use torque wrenches when tightening the flare nuts to prevent damage to the flare nuts and escaping gas.

Flare nut fightening torque	
Flare nut for ∅6.35	14.2-17.2N.m(144-175kgf.cm)
Flare nut for ∅9.52	32.7-39.9N.m(333-407kgf.cm)
Flare nut for ∅12.7	49.5-60.3N.m(505-615kgf.cm)
Flare nut for ∅15.88	61.8-75.4N.m(630-769kgf.cm)





Valve cap tightening torque
Liquid pipe 26.5-32.3N.m(270-330kgf.cm)
Gas pipe 48.1-59.7N.m(490-610kgf.cm)

Service port cap tightening torque
10.8-14.7N.m(110-150kgf.cm)

2)To prevent gas leakage, apply refrigeration oil on both inner and outer surfaces of the flare. (Use refrigeration oil for R410A)

4. Purging air and checking gas leakage

When piping work is completed, it is necessary to purge the air and check for gas leakage.

⚠ WARNING

1) Do not mix any substance other than the specified refrigerant (R410A) into the refrigeration cycle.
2) When refrigerant gas leaks occur, ventilate the room as soon and as much as possible.
3) R410A, as well as other refrigerants, should always be recovered and never be released directly into the environment.
4) Use a vacuum pump for R410A exclusively. Using the same vacuum pump for different refrigerents may damage the vacuun pump or the unit.

- If using additional refrigerant, perform air purging from the refrigerant pipes and indoor unit using a vacuum pump, then charge additional refrigerant.
- Use a hexagonal wrench (4mm) to operate the stop valve rod.
- All refrigerant pipe joints should be tightened with a torque wrench at the specified tightening torque.

Connect projection side of charging hose(Which comes from gauge manifold) to gas stop valve's service port.

⇩

Fully open gauge manifold's low-pressure valve(Lo) and completely close its high-pressure valve(Hi).
(High-pressure valve subsequently requires no operation.)

⇩

Apply vacuum pumping. Check that the compound pressure gauge reads-0.1MPa(-76cmHg).
Evacuation for at lease 1 hour is recommended.

⇩

Close gauge manifold's low-pressure valve(Lo) and stop vacuum pump.
(Leave as is for 4-5 minutes and make sure the coupling meter needie does not go back.
If it does go back, this may indicate the presence of moisture or leaking from connecting parts. After inspecting all the connection and loosening then retightening thenuts, reqeat steps 2-4.)

⇩

Remove covers from liquid stop valve and gas stop valve.

⇩

Turn the liquid stop valve's rod 90 degrees counterclockwise with a hexagonal wrench to open valve.
Close it after 5 seconds, and check for gas leakage.
Using soapy water, check for gas leakage from indoor unit's flare and outdoor unit's flare and valve rods.
After the check is complete, wipe all soapy water off.

⇩

Disconnect charging hose from gas stop valve's service port, then fully open liquid and gas stop valves.
(Do not attempt to turn valve rodj beyond its stop.)

⇩

Tighten valve caps and service port caps for the liquid and gas stop valves with a torque wrench at the specified torques. See "3 Refrigerant piping " on page 6 for details.

5. Refilling the refrigerant

Check the type of refrigerant to be used on the machine namiplate.

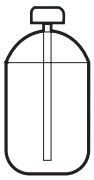
Precautions when adding R410A

Fill from the liquid pipe in liquid form.

It is a mixed refrigerant, so adding it in gas form may cause the refrigerant composition to change, preventing normal operation.

1) Before filling, check whether the cylinder has a siphon attached or not.(It should have something like "liquid filling siphon attached" displayed on it.)

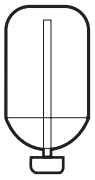
Filling a cylinder with an attached siphon



Stand the cylinder upright when filling.

There is a siphon pipe inside, so the cylinder need not be upside-down to fill with liquid.

Filling other cylinders



Turn the cylinder upside-down when filing.

2) Be sure to use the R410A tools to ensure pressure and to prevent foreign objects entering.

6. Charging with refrigerant

1) This system must use refrigersant R410A.
2) Add refrigerant 20g per meter when the total piping length exceeds the standard value, but make sure that the total liquid piping length should be less than the max. value.

Outdoor Unit	Standard total liquid piping length	Max. total liquid piping length
3U19FS1ERA	30m	50m
4U25HS1ERA	40m	70m
4U30HS1ERA	40m	70m
5U34HS1ERA	40m	80m

Notes:

1) When using this product, you need not to set the address. But the L/N wires between indoor & outdoor units must be corresponded, or there will be communication failure.
2) Quiet Operation Setting. Set the DIP "8" to ON position of SW5, the system will run with lower noise, but the max. capacity will also reduce slightly.
3) Do not change the settings of other switchs, wrong settings can make the system damage or other malfunctions.

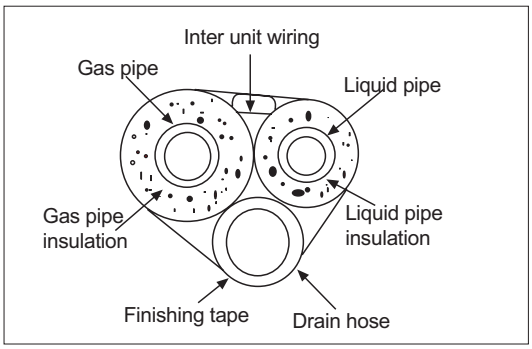
7.Precautions for Laying Refrigerant Piping

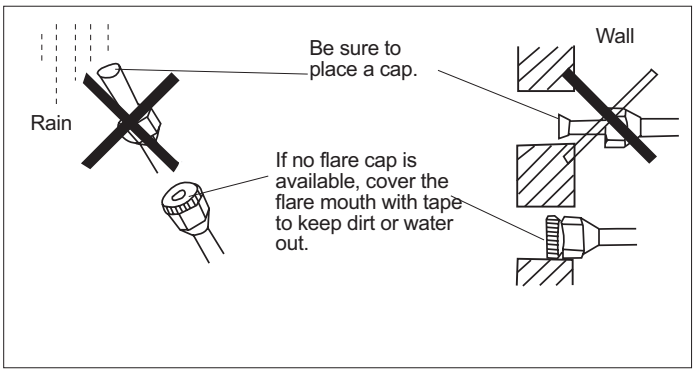
- **Cautions on pipe handling**
  1) Protect the open end of the pipe against dust and moisture.
  2) All pipe bends should be as gentle as possible. Use a pipe bender for bending.(Bending radius should be 30 to 40mm or larger.)
- **Selection of copper and heat insulation materials**

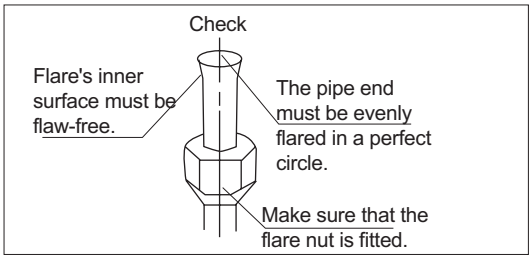
  When using commercial copper pipes and fittings, observe the following :
  1) Insulation material: Polyethylene foam
  Heat transfer rate: 0.041 to 0.052W/mK(0.035to 0.045kcal/mh$^{\circ}$C)
  Refrigerant gas pipe's surface temperature reaches 110°C max.
  Choose heat insulation materials that will withstand this temperature.
  2) Be sure to insulate both the gas and liquid piping and to provide insulation dimensions as below.

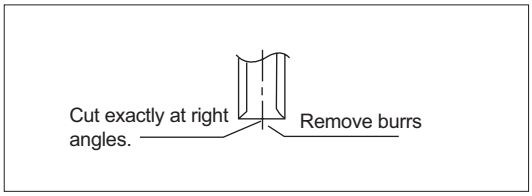
Gas pipe	Gas pipe insulation
O.D.:9.52mm,12.7mm Thickness:0.8mm	I.D.:12-15mm,12.7mm Thickness:13mm min.
Liquid pipe	Liquid pipe insulation
O.D.:6.35mm Thickness:0.8mm	I.D.:18-10mm Thickness:10mm min.

3) Use separate thermal insulation pipes for gas and liquid refrigerant pipe.

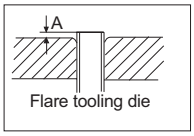








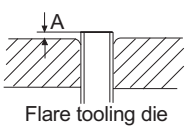
Set exactly at the position shown below.



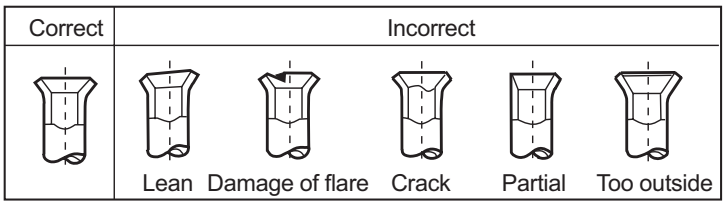
	Flare tool for R410A	Conventional flare tool	
	Clutch-type	Clutch-type(Rigid-type)	Wing-nuttype(Imperial-type)
	0-0.5mm	1.0-1.5mm	1.5-2.0mm

8.Cutting and Flaring work of piping

- Pipe cutting is carried out with a pipe cutter and burs must be removed.
- After inserting the flare nut, flaring work is carried out.

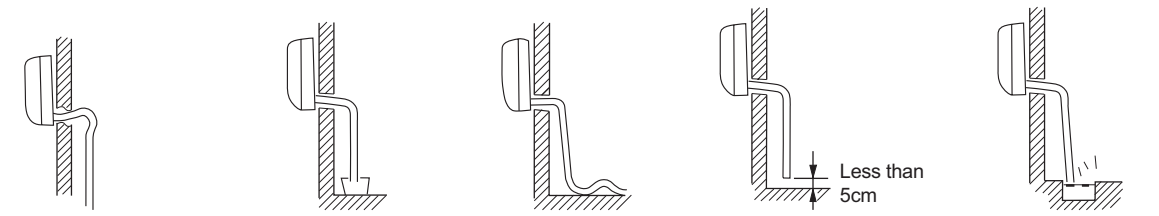


Pipe	Pipe diameter φ	Size A (mm)
Liquid side	6.35mm(1/4")	0.8~1.5
Gas side	9.52mm(3/8")	1.0~1.5
	12.7mm(1/2")	1.0~1.5



9. On drainage

- Please install the drain hose so as to be downward slope without fail. Please don't do the drainage as shown below.



It becomes high midway. | The end is immersed in water | It waves. | It gap with the ground its too small. | There is the bad smell from a ditch.

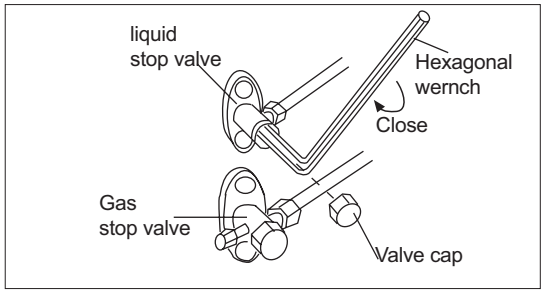
- Please pour water in the drain pan of the indoor unit, and confirm that drainage is carried out serely to outdoor.
- In case that the attached drain hose is in a room, please apply heat insulation to it without fail.

⚠ WARNING

1) Do not use mineral oil on flared part.
2) Prevent mineral oil from getting into the system as this would educe the lifetime of the units.
3) Never use piping which has been used for previous installations. Only use parts which are delivered with the unit.
4) Do never install a drier to this R410A unit in order to guarantee its lifetime.
5) The drying material may dissolve and damage the system.
6) Incom;ete flaring may cause refrigerant gas leakage.

In order to protect the environment, be sure to pump down when relocating or disposing of the unit.

1) Remove the valve caps from liquid stop valve and gas stop valve.
2) Carry out forced cooling operation.
3) After five to ten minutes, close the liquid stop valve with a hexagonal wrench.
4) After two to three minutes, close the gas stop vaile and stop forced cooling operation.

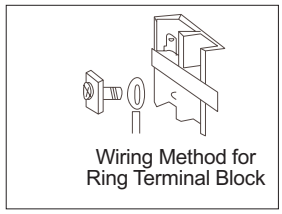


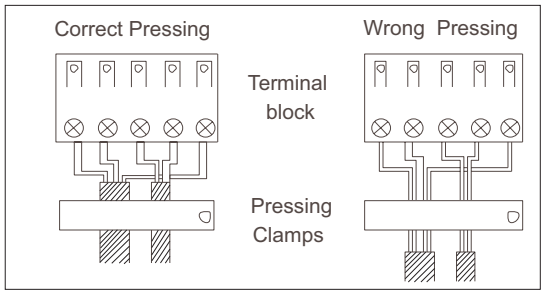
1. Electric wiring

- The air conditioner must use special circuit , and wiring by the qualified electrician according to the wiring rules specified in national standard.
- The grounding wire and the neutral wire shall be strictly separated. Connect the neutral wire with grounding wire is incorrect.
- The electric leakage breaker must be installed.
- All the electric wire must be copper wire.Power supply: 1PH, 220-230V~, 50/60Hz.
- The wiring method of power line is Y connection. If the power line is damaged, in order to avoid risk of electric shock, it must be replaced by the manufacturer or its repair center or other similar qualified person.The connecting cable must be shielded.
  Fuse: T3.15A 250VAC T16A 250VAC (Please check with the outdoor unit wiring diagram.)
- Please check the circuit diagram about the fuse replaced.

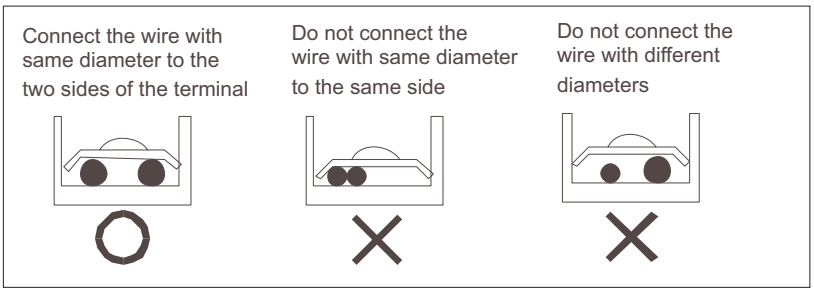
2. Wiring method

- Wiring method of orbicular terminals
  For the connection wire with orbicular terminals, its wiring method is as shown in the right figure: remove the connecting screw, put the screw through the ring on the end of the wire, then connect to the terminal block and fasten screw.
  Wiring method of straight terminals .
- For the connection wire without orbicular terminals, its wiring method is: loosen the connection screw, and insert the end of the connection wire completely into the Terminal block, then fasten the screw.
  Slightly pull the wire outwards to confirm it is firmly held.





- Crimp connection method for wires without terminals

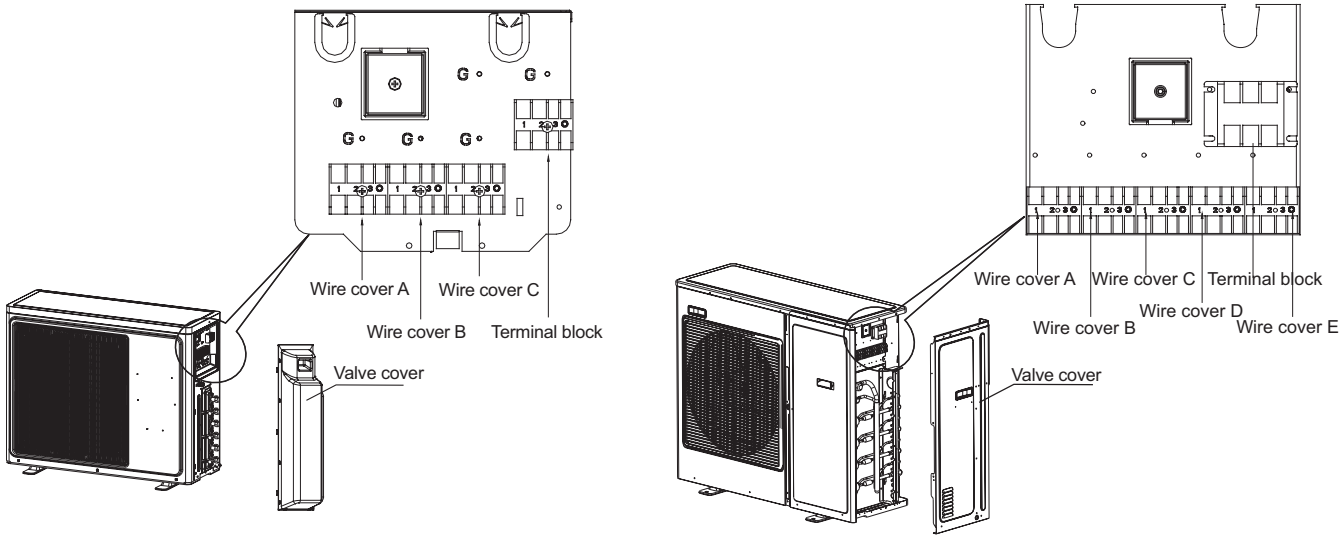


- Crimp connection method for connection wire
  After connection,the wire must be fastened by wire cover. The wire cover shall press on the protection coat of the connection wire,as shown in right top figure.
  Note:When connecting the wiring,confirm the terminal number of indoor and outdoor units carefully. Incorrect wiring will damage the controller of air conditioner or the unit can not operate.

3. Wiring method of outdoor unit:

- Power line
  Remove the repair board of the outdoor unit and loosen the wire cover A,then put the live wire, neutral wire and grounding wire through the wire cover ,and connect them to terminal block correspon dingly. After connection, fasten wire cover to its previous state.
  Communication wire of indoor unit.
- Loosen wire cover , put the communication wire through the wire cover B, and connect them to terminal block correspondingly. After connection, fasten wire cover B to its previous state.

Note: Power line and communication wire are provided by consumers themselves.



4. Wiring method of indoor unit

Loosen wire cover and connect the power line and communication wire of indoor unit to the terminal correspondingly.

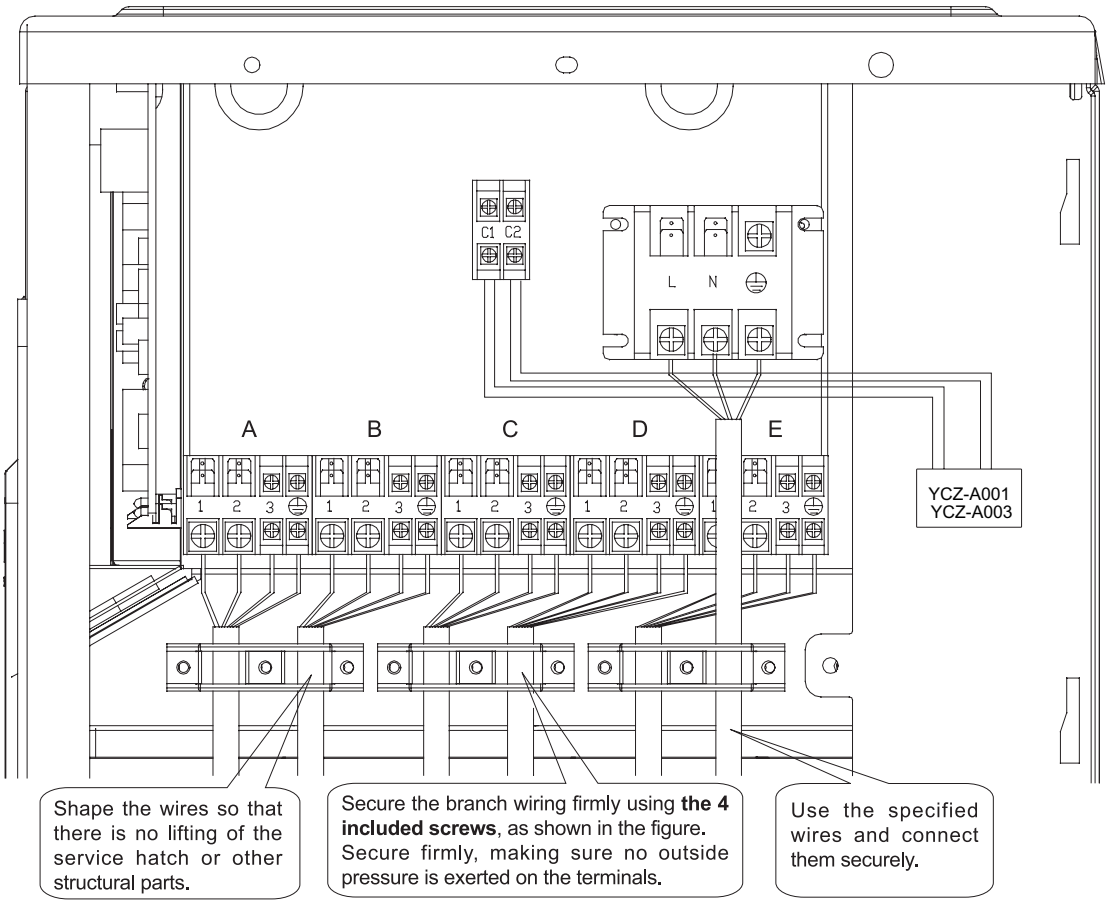
Note:

When connecting power line to power supply terminal, please pay attention to the following items:

- Do not connect the power line with different dimensions to the same connection wire end. Improper contact will cause heat generation.
- Do not connect the power line with different dimensions to the same grounding wire end. Improper contact will affect protection.
- Do not connect the power line to the connecting end of communication wire. Incorrect connection will cause damage to the connected unit.

5. Example wiring diagram.

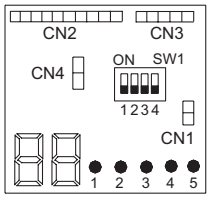
Wiring diagram please refers to 4U30HS1ERA



- Before starting the test running, please confirm the following works have been done successfully.
  1) Correct piping work;
  2) Correct wiring work;
  3) Correct match of indoor and outdoor unit;
  4) Proper recharge of refrigerant if needed.
- Make sure that all the stop valves are fully open.
- Check the voltage supplied to the outdoor and indoor units, please cinfirm that is 230V.

- Wiring Error Check

This product is capable of automatic checking of wiring error.



Switch on all the 4 dip-switches on the outdoor unit small service PC-board as shown on the right. Then power off the unit and power on again, the system will enter the operation of "Wiring Error Check". After 3 minutes stand-by, the unit starts for automatic wiring checking.
Approximately 30 ~ 50minutes (depends on how many units installed in the system) after the unit starts, the Errors of the wiring will be shown by the LEDs (1 to 5).

During this operation, the digital-number will alternately show the compressor working frequency (e.g. 50 stands for the current running frequency) and letter "CH"(means checking).
After this operation, if all the wiring is correct, the digital-number will show "0", if there has wrong wiring, the digital-number will show "EC"(error connection) and also it will flashing.

The service monitor LEDs indicate the error of wiring, as shown in the table below. For details about how to read the LED display, refer to the service manual.

If self-checking is not possible, check the indoor unit wiring and piping in the usual manner.

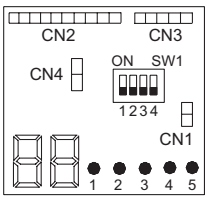
LED	1	2	3	4	5	Message
Status	OFF					Unit not connected
	ALL Flashing					Automatic checking impossible, all units connect wrong
	ALL ON					All units connect correctly
	ON	FLASHING	FLASHING	ON	FLASHING	**ON**: unit connect correctly **FLASHING**: unit connect wrong, need to change the wiring manually between 2,3,and 5
	ON	FLASHING	FLASHING	ON	ON	**ON**: unit connect correctly **FLASHING**: unit connect wrong, need to change the wiring manually between 2,3
						Abnormal

- Test running.

1) If the temperature is lower than 16 ^{o}C, it is impossible to test cooling with remote controller, and also when the temperature is higher than 30 ^{o}C, it is impossible to test heating.
2) To test cooling, set the lowest temperature at 16 ^{o}C. To test heating,set the highest temperature, at 30 ^{o}C.
3) Please check both cooling and heating operation of each unit individually and then also check the simultaneous operation of all indoor units.
4) After ruuning the unit for about 20 minutes, check the indoor unit outlet temperature.
5) After the unit is stopped, or working mode changed, the system will not start again for about 3 minutes.
6) During cooling operation, frost may ocur on the indoor unit or pipes, this is normal.
7) Operate the unit according to the operation manual. Please kindly explain to our customers how to operate through the instruction manual.

- Seven-segment numeric display

1) When unit is runing, this seven-segment numeric will display the frequency of compressor. For example, 40 means compressor running frequency is 40 Hz, 108 means compressor running frequency is 108Hz.
2) When faulty happens, seven-segment numeric will flash and display some numbers, this number is failure code. For example, a flashing 32 means No.32 failure, that is indoor and outdoor communication error.



- Communication LED

5 green LED means 5 indoor units. If one LED keep lighting that means the corresponding indoor unit has good communication with outdoor unit. If one LED is not lighting, that means there is no communication between indoor and outdoor.

4.5. Cassette type AB***ERA

Installation Tools

1.Installation tools

The installation tools listed in the following sheet can be used as required.

1. Screw driver
2. Hacksaw
3. Drill with a diameter of 60mm
4. Inner hexagon spanner,shifting spanner
5. Spanner (14, 17, 19,24,27mm)
6. Pipe cutter
7. Pipe expander
8. Knife
9. Pincers
10. Leakage detector or soapy water
11. Band tape
12. Scraper
13. Refrigerant oil

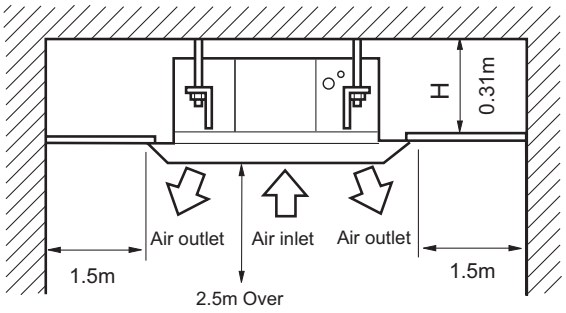
2.Accessories (factory provided)

Symbol	Parts Name
A	Adhesive tape
B	Pipe clamp
C	Connecting hose
D	Drainage hose
E	Non-hydroscopic heat insulating material
F	Gypsum powder

Installation Procedures

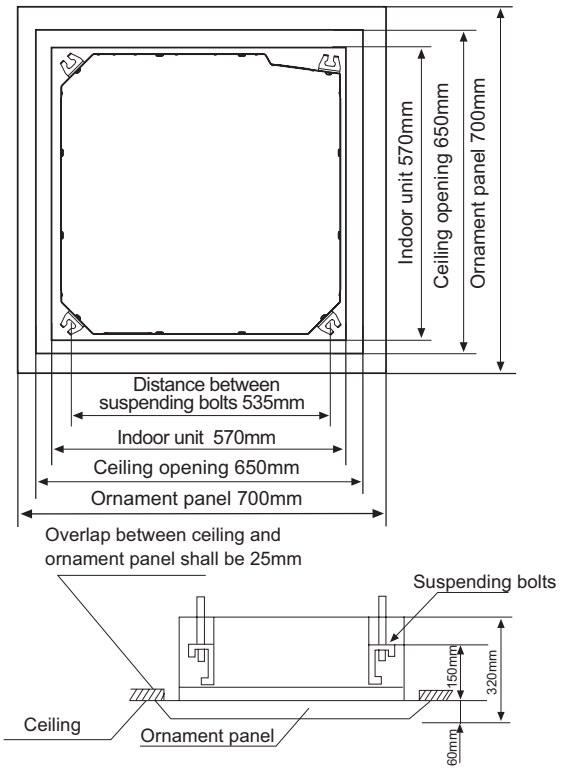
1.Selection of Installation Place

(1) Place above the ceiling where have enough space to arrange the unit.
(2) Place where the drainage pipe can be arranged well.
(3) Place where inlet and outlet air of indoor and outdoor unit will not be blocked.
(4) Do not expose the unit to the place with heavy oil or moisture (e.g.kitchen and workshop).
(5) Do not set the unit in the place where destructive gas (such as sulfuric acid gas) or pungent gas (thinner and gasoline) concentrates and retains.
(6) Place strong enough to support the unit weight.
(7) No expensive articles such as television and piano below indoor unit.
(8) Enough space for maintenance.
(9) Place more than 1m away from television and radio to avoid disturbing television and radio.
(10) Easy for maintenance.



2.Installation Preparation

(1) Position of ceiling opening between unit and suspending bolt (front view of unit).



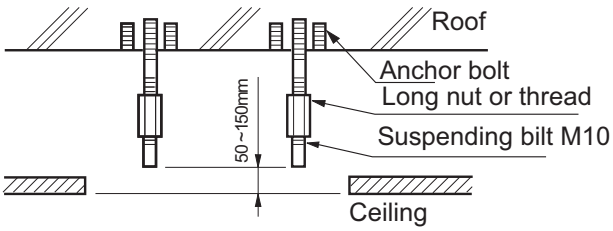
(2) Prepare all piping (refrigerant,water drainage)and wires (connection wire of remote controller, indoor unit connection wires) to the indoor unit before installation in order to connect indoor unit immediately after installation.

Installation Procedures

(3) Install a suspending bolt

To support the unit weight ,anchor bolt should be used in the case of already exists ceiling. Fow new ceiling, use flush-in type bolt, built-in type bolt or parts pretared in the field.
Before going on installing, adjust space to ceiling.

<Installation Example>



Note: All the above mentioned parts shall be prepared in feild, the diameter of suspending bolt is M10

3. Installation of indoor unit

In case of no ceiling
Install unit temporarily

Put suspending bracket on the suspending bolt to hang the unit up. Be sure to use nut and washer at both end of the breaket to secure firmly.

After installation on the ceiling

(1) Adjust unit to its right position (Refer to preparation for installation-(1))

(2)Check that unit is horizontal.

Water pump and floating switch is installed inside indoor unit,check four corners of the unit for its lever using horizontal comparator or PVC tube with water.(If unit is tilting against the direction of water drainage, problem may occur on floating water leakage.)

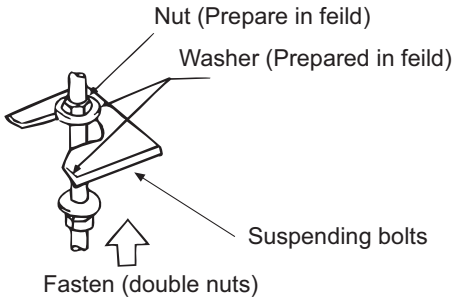
In the case of ceiling already exists

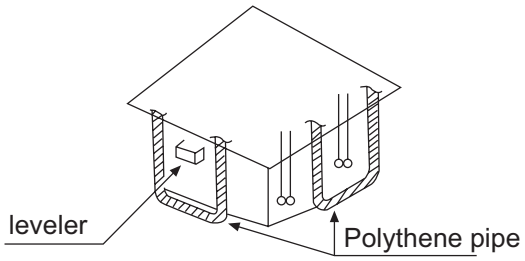
(1)Install unit temporarily

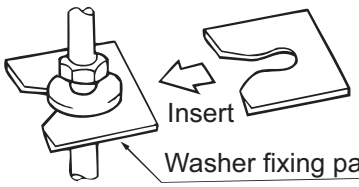
Put suspending bracket on the suspending bolt to hang the unit up.Be sure to use nut and washer at both end of the bracket to secure it firmly.

(2)Adjust the height and position of the unit.

(3)Proceed with procedure (4) of " In the case of no ceiling "





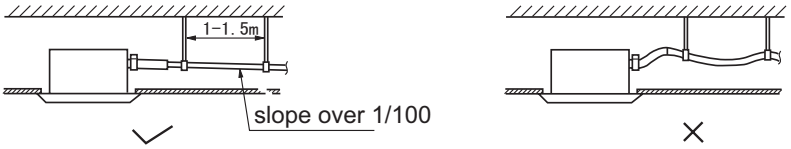


[secure the washer firmly]

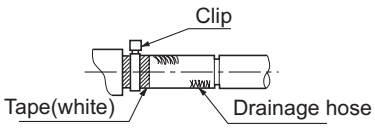
4. Installation of water drainage pipe

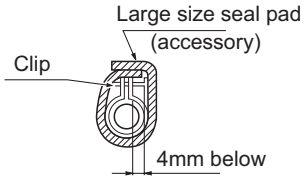
(1) Install water drainage pipe

- Pipe diameter shall be equal or larger than that of connecting pipe (Pipe of polythene; size:25mm; O.D.: 32mm)
- Drainpipe should be short, with a downward slope at least 1/100 to prevent air bag from forming.
- If downward slope of drainpipe cannot be made,lifting pipe shall be installed.
- Keep a distance of 1-1.5m between suspending bolts, to make water hose straight.



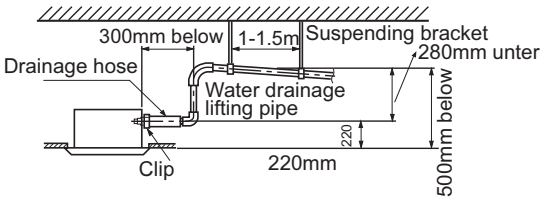
- Use the drainage hose and clip provided with unit.
  Insert water pipe into water plug until it reaches the white tape.
  Tighten the clip until head of the screw is less than 4mm from hose.
- Wind the drainage hose to the clip using seal pad for heat insulation.
- Insulate drainage hose in the room.

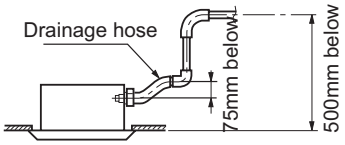




5. Cautions for the water drainage lifting pipe

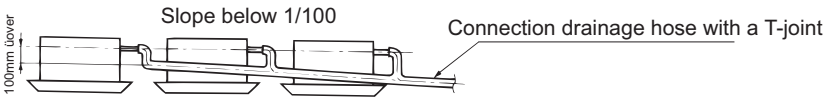
- Installation height of water drainage lifting pipe shall be less than 280mm
- There should be a right angle with unit ,300mm from unit.





< Note >

- The slope of water drainage hose shall be within 75mm , make the drainage plug not to bear excessive force.
- If several water hoses join together, of as per following procedures.



Specifications of the selected drainage hoses shall meet the requirements for the unit running

6. Installation of Ornament Panel

Install ornament panel on indoor unit

(1) Check whether indoor unit is horizontal with leveler or polythene pipe filled with water , and check that the dimension of the ceiling opening is correct. Take off the lever gauge before installing the ornament panel.

(2) Fasten the screws to make the height difference between the two sides of indoor unit less than 5mm.

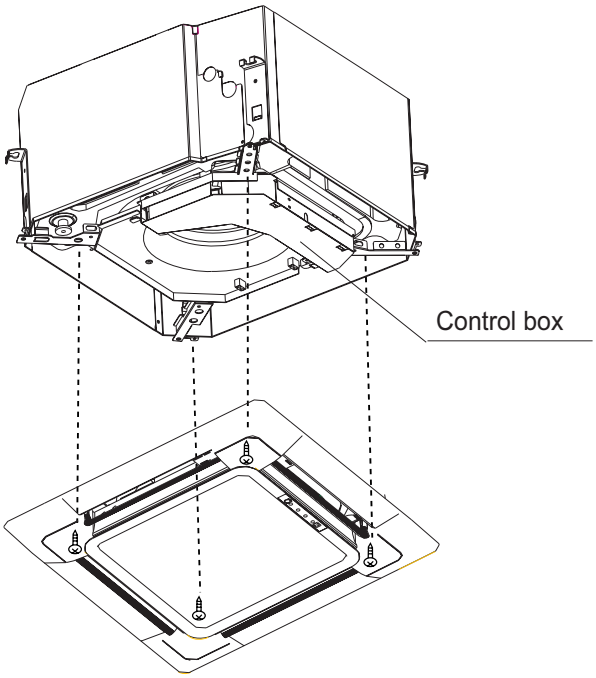
(3) First fix it with screws temporally.

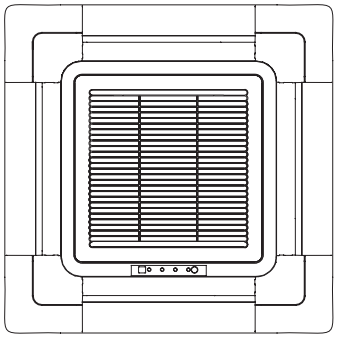
(4) Fasten the two temporally fixing screws and other two, and tighten the four screws.

(5) Connect the wires of synchro-motor.

(6) Connect the wire of signal.

(7) If no response of remote controller,check whether the wiring is correct,restart remote controller 10 seconds after shut off power supply.

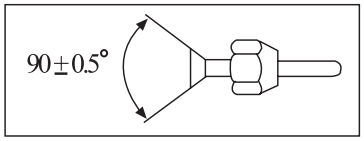




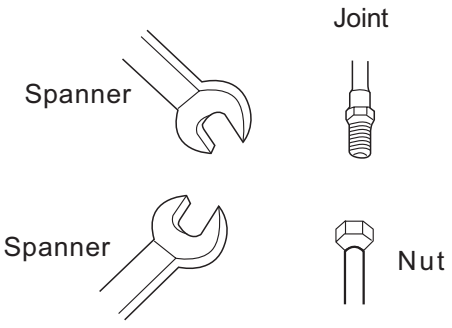
Limits of panel board installation

(1)Install the panel board in the direction shown in the figure.
(2)The incorrect direction will result in water leakage, meanwhile swing and signal receiving are not be connected successfully.

7. Piping Connection



- Fit the nut on and fasten



The maximum length and drop height of connecting pipe

- The maximum length is 20m
- The maximum drop height is 10m.
- To ensure the efficiency ,Pipes shall be as short as possible.

Cautions for piping connection

- Do not twist or deform the connecting pipe.
- Do not mix dusts.
- The bending radius shall be as large as possible.
- Both gas pipe and liquid pipe shall be heat insulation.
- No leakage in the flare.

Diameter of Pipe	Tighten Torque (N.m)
Liquid Pipe 6.35mm	11.8
Gas Pipe 9.52mm	50

If not aligned ,tighten the nut by force will damage the nut that result in gas leakage

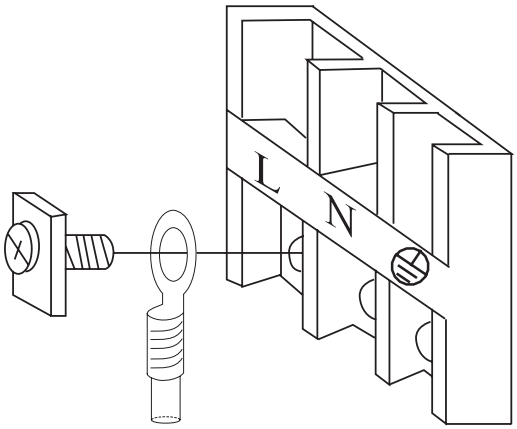
Piping connection

- Connecting method

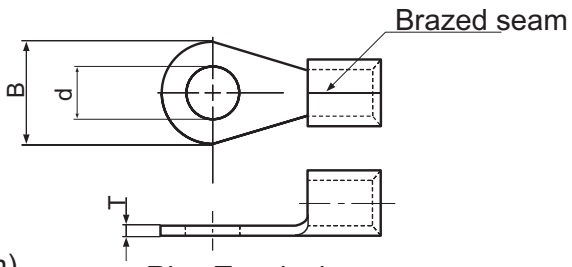
Smear refrigerant oil on the joints of piping and flare.
The bending radius shall be as large as possible.
Align the pipe center when fastening, and tighten the nut, as shown in the figure.
Pay attention to not mix foreign matters such as sands in.

8.Electrical Wiring
Wiring methods:
8.1 Wiring method of ring terminal

For connecting line whose end is a ring,its wiring method as shown in the right figure: remove wiring screw and pass it through the end ring of connecting line,then connect it to the terminal block and tighten screw.



Wiring method of ring terminal



Ring Terminal

B=8.0-9.0(mm)
d=4.3-5.3(mm)
T=1.0-2.0(mm)
(For your reference)

4.6. Convertible type AC*** ERA

SELECTING THE MOUNTING POSITION

⚠ WARNING

Install at a place that can withstand the weight of the indoor and outdoor units and install positively so that the units will not topple or fall

⚠ CAUTION

(1)Do not install where there is the danger of combustible gas leakage.

(2) Do not install near heat sources.

(3) If children under 10 years old may approach the unit, take preventive measures so that they cannot reach the unit.

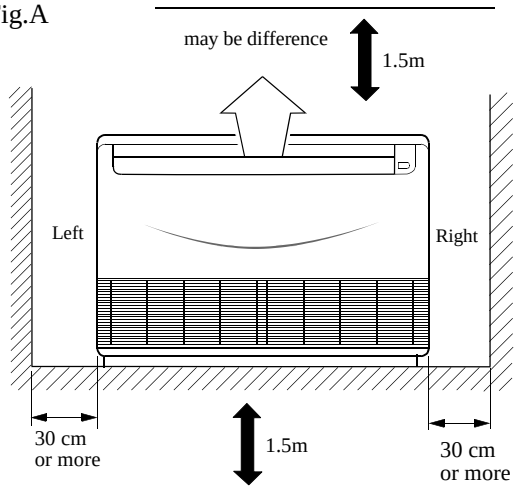
Decide the mounting position with the customer as follows:

INDOOR UNIT

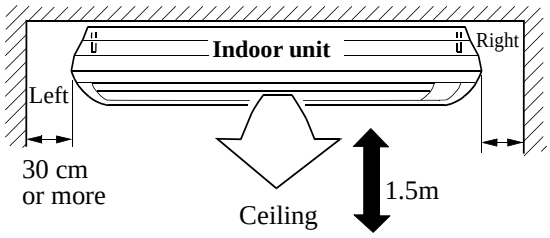
(1) Install the indoor unit level on a strong wall, floor, ceiling which is not subject to vibration.
(2) The inlet and outlet ports should not be obstructed: the air should be able to blow all over the room.
(3) Install the unit near an electric outlet or special branch circuit.
(4) Do not install the unit where it will be exposed to direct sunlight.
(5) Install the unit where connection to the outdoor unit is easy.
(6) Install the unit where the drain pipe can be easily installed.
(7) Take servicing, etc. into consideration and leave the spaces shown in Fig.A. Also install the unit where the filter can be removed.

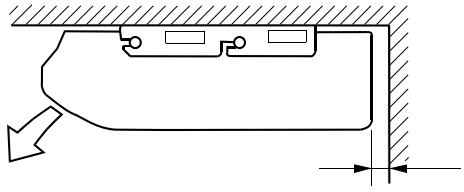
- **Floor console**

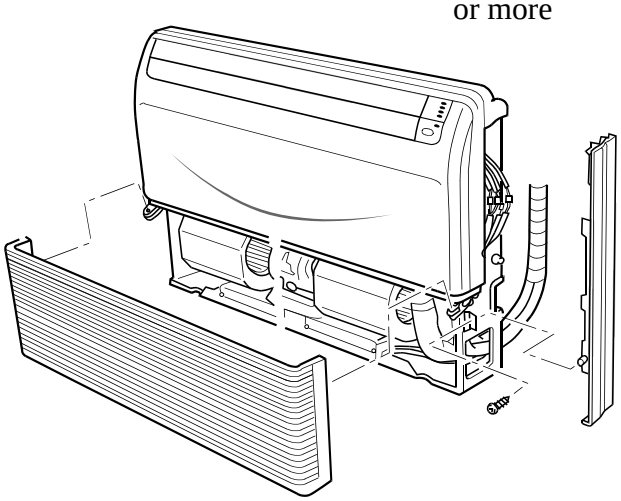
Fig.A



- **Under ceiling**







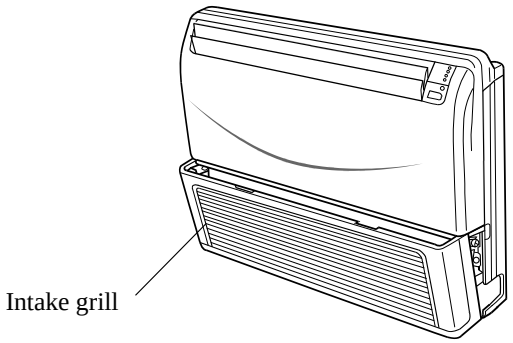
Indoor unit

PREPARING INDOOR UNIT INSTALLATION

REMOVE THE INTAKE GRILL

Open the intake grill and remove the three or four or six screws.(Fig. 1)

Fig. 1

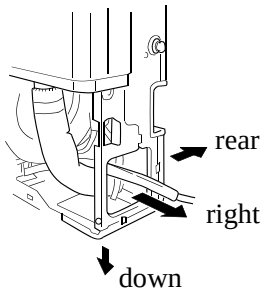


Remark:
The main unit can be wired before the indoor unit is installed. Select the most appropriate installation order.

A. FLOOR CONSOLE TYPE

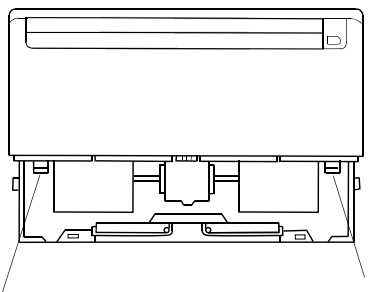
1. DRILLING FOR PIPING
   Select piping and drain directions.(Fig.2)
   The piping and drain can be made in three directions as shown below.

(Fig.2)



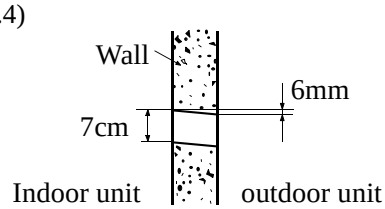
The drain hose can be connected to either the left or right side.(Fig.3)

(Fig. 3)



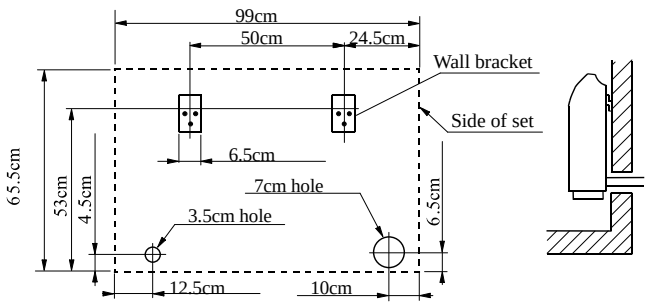
When the directions are selected, drill a 7 cm dia. hole on the wall so that the hole is tilted downward toward the outdoor for smooth water flow. When the pipe is led out from the rear, make a hole in Fig.4, at the position shown.

(Fig.4)



When installing set to wall, install the accessory wall bracket at the position shown in Fig.5,and mount the set to it.

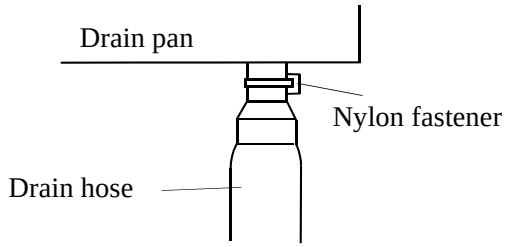
(Fig. 5)



2. INSTALLING DRAIN HOSE

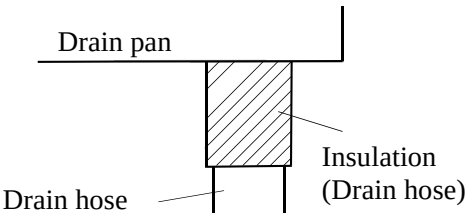
Select whether the drain hose will be connected to the left or right side.(Fig.3) Insert the drain hose into the drain pan, then secure the drain hose with a nylon fastener. (Fig.6)

(Fig. 6)



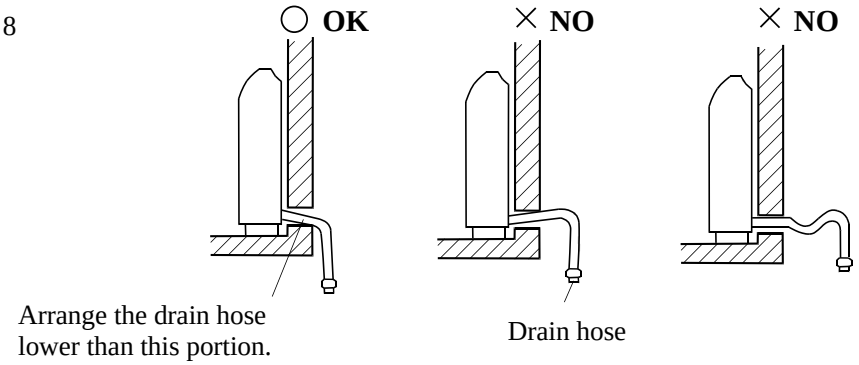
Wrap the insulation (drain hose) around the drain hose connection. (Fig.7)

(Fig. 7)



Be sure to arrange the drain hose correctly so that it is leveled lower than the drain hose connecting port of the indoor unit.

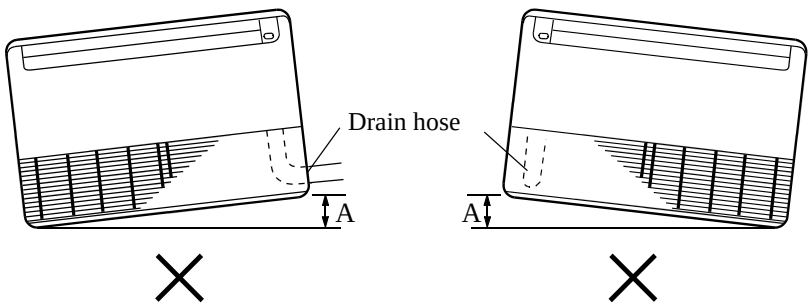
Fig. 8



⚠ CAUTION

Do not install the unit drain hose side is too high. Height A should be less than 5 mm.(Fig.9)

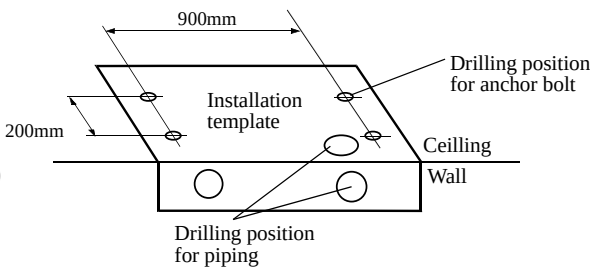
Fig. 9



B. UNDER CEILING TYPE

Using the installation template, drill holes for piping and anchor bolts(for holes).(Fig.10)

Fig. 10



1. DRILLING FOR PIPING

Select piping and drain directions. (Fig.11)

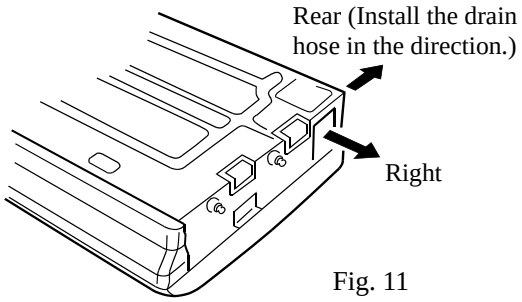


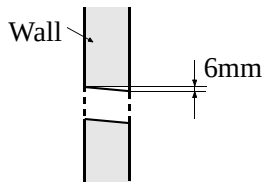
Fig. 11

⚠ CAUTION

Install the drain hose at the rear; it should not be installed on the top or right side.

When the directions are selected, drill 80mm and 50mm or 150mm dia. hole on the wall so that the hole is tilted downward toward the outdoor for smooth water flow.

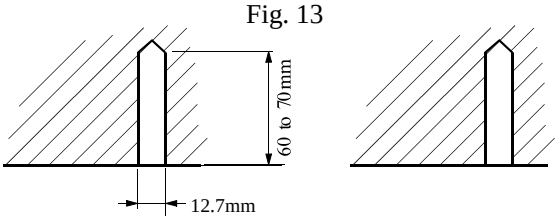
Fig. 12



2. DRILLING HOLES FOR ANCHOR BOLTS AND INSTALLING THE ANCHOR BOLTS

With a concrete drill, drill four 12.7 mm dia. Holes. (Fig.13)

Fig. 13



Insert the anchor bolts into the drilled holes, and drive the pins completely into the anchor bolts with a hammer. (Fig. 14)

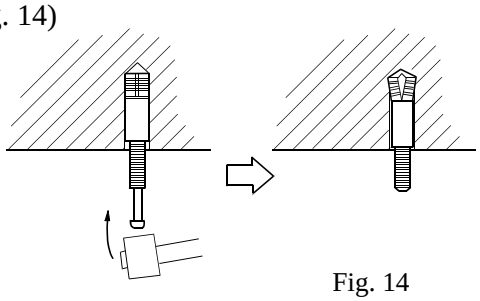
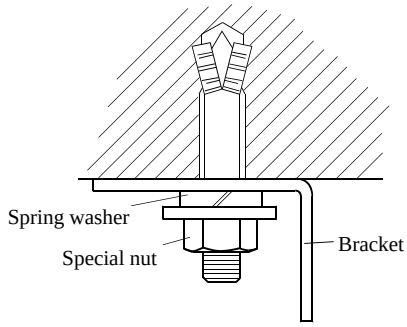


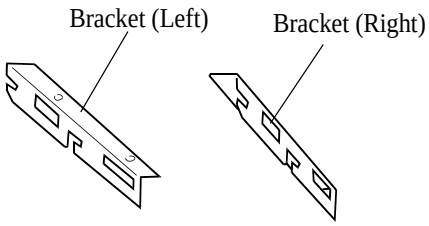
Fig. 14

3. INSTALLING BRACKETS

Install the brackets with nuts, washers and spring washers.(Fig. 15)

Fig. 15

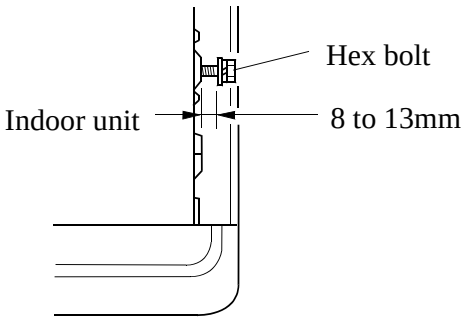




4. INSTALLING INDOOR UNIT

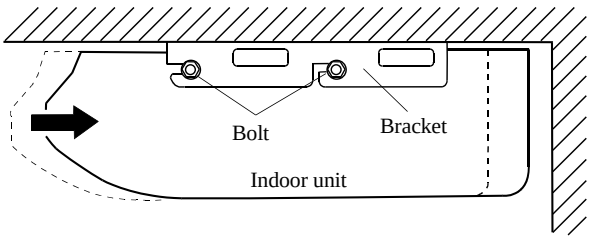
Reset the hex bolts as shown in Fig.16.

Fig. 16



Apply the indoor unit to the brackets.(Fig.17)

Fig. 17



Now, securely tighten the hex bolts in both sides.

5. INSTALL THE DRAIN HOSE

Select whether the drain hose will be connected to the left or right side.(Fig.3)
Insert the drain hose into the drain pan, then secure the drain hose with a nylon fastener.(Fig.6)
Wrap the insulation (drain hose)around the drain hose connection.(Fig.7)
Be sure to arrange the drain hose correctly so that it is leveled lower than the drain hose connecting port of the indoor unit.(Fig.18)

Fig. 18

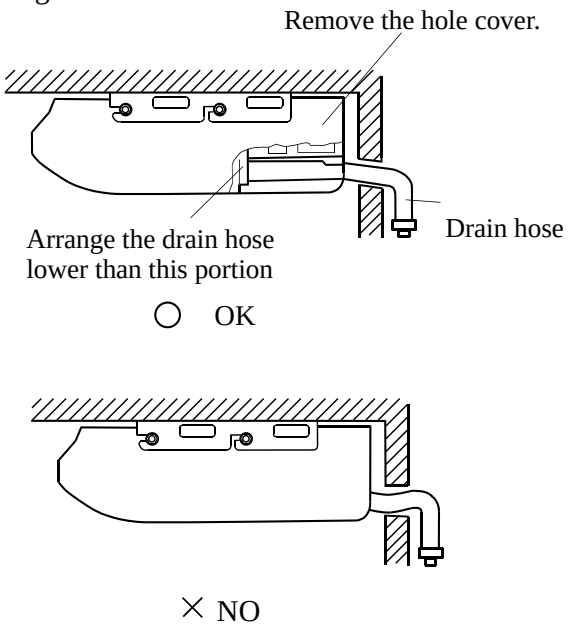
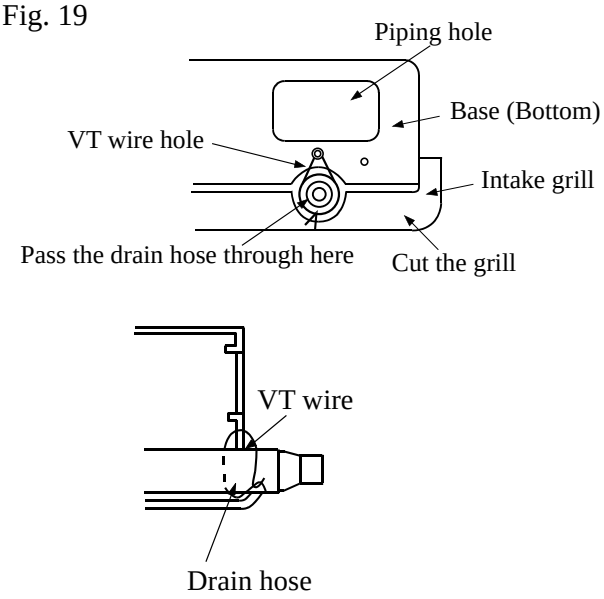


Fig. 19



OUTDOOR UNIT INSTALLATION

CONNECTING THE PIPING

1. FLARE PROCESSING

(1) Cut the connection pipe with pipe cutters so that the pipe is not deformed.

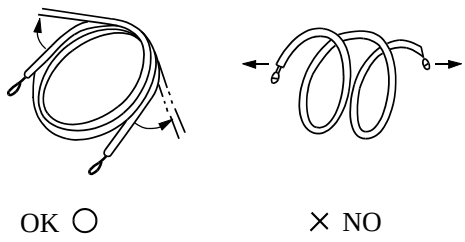
(2) Holding the pipe downward so that cuttings cannot enter the pipe, remove the burrs.

(3) Remove the flare nut from the indoor unit pipe and outdoor unit and insert the flare nut onto the pipe, and flare with a flaring tool.

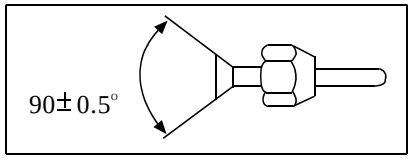
2. BENDING PIPES

The pipes are shaped by your hands. Be careful not to collapse them.

Fig. 21



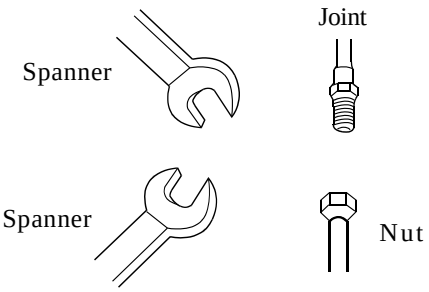
3. PIPING CONNECTION



- Fit the nut on and fasten

The maximum length and drop height of connecting pipe

- Please refer to the installation manual of outdoor unit
- To ensure the efficiency , Pipes shall be as short as possible.



Cautions for piping connection

- Do not twist or deform the connecting pipe.
- Do not mix dusts.
- The bending radius shall be as large as possible.
- Both gas pipe and liquid pipe shall be heat insulation.
- No leakage in the flare.

Diameter of Pipe	Tighten Torque (N.m)
Liquid Pipe 6.35mm	11.8
Gas Pipe 12.7mm	49.0

Piping connection

- Connecting method

Smear refrigerant oil on the joints of piping and flare.
The bending radius shall be as large as possible.
Align the pipe center when fastening, and tighten the nut, as shown in the figure.
Pay attention to not mix foreign matters such as sands in.

If not aligned ,tighten the nut by force will damage the nut that result in gas leakage